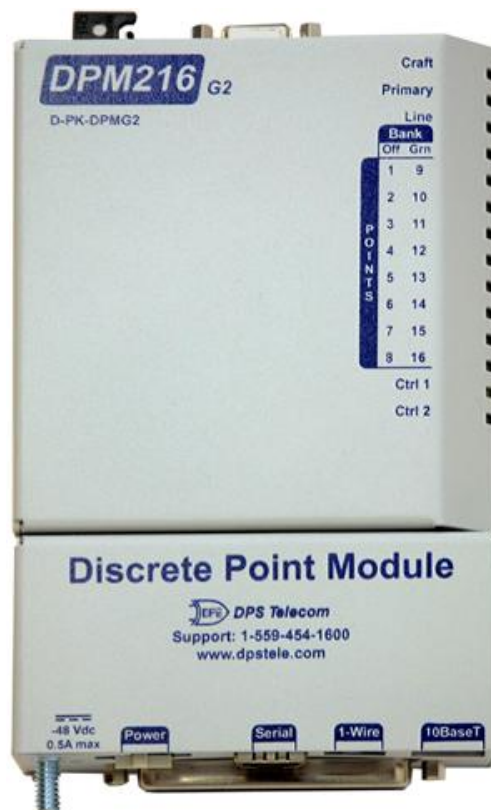


Discrete Point Module (DPM) 216 TRIP

USER MANUAL



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Revision History

June 15, 2011	Added instructions for TRIP notifications, misc updates
May 27, 2011	Misc web interface updates
December 8, 2010	Updated status lights, pinouts, and shipping list
September 13, 2010	Preliminary release.

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1 DPM 216 TRIP Overview

Effective, easy-to-install, light-capacity alarm monitoring

The DPM 216 TRIP is a compact, LAN-based, light-capacity remote telemetry unit. The DPM 216 TRIP is designed for easy installation at small remote sites, making it cost-effective to deploy alarm monitoring throughout your entire telecom network.

- Cost-effective alarm reporting from even your smallest remote sites
- Receive alarm notifications via alpha pagers
- Monitor up to 16 alarm inputs and 2 control outputs at remote sites
- **New!** Now featuring built-in web browser
- **New!** 4 user-defined analogs
- **New!** 202 modem build option
- **New!** Supports internal & external temp sensors
- **New!** Amphenol connector for easier alarm termination
- Supports SNMPv1 and SNMPv2c (**New!**) for robust message delivery
- Connect to T/Mon NOC over LAN (**New!**), dialup, or dedicated line
- Available in AC or DC power

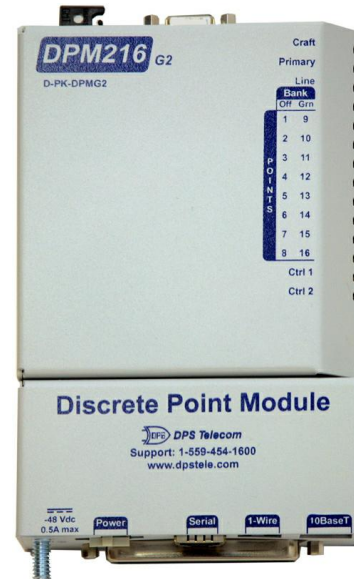


Fig. 1.1 Compact, easy-to-install, right-size capacity — the DPM 216 TRIP effectively monitors smaller sites.

How the DPM TRIP works for you...

Monitor and control your critical equipment 24/7 — no matter how distant, isolated, or hard to reach your equipment might be. The Discrete Point Module (DPM) is a compact, self-contained alarm system for reliable monitoring anywhere - cell towers, refrigeration units, or anywhere else. The DPM reports alarms directly to your alpha pager, or multiple DPMs report to T/Mon NOC for centralized alarm monitoring of:

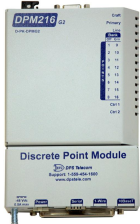
- **Telecom:** all contact closure devices such as equipment with Mj/Mn alarms, tower lights, back-up power systems, doors, fire and flood detection.
- **Agriculture:** DPMs in barns or outbuildings will notify you of unauthorized entry, extreme temperature, fire, low water pressure and pump operation. With the built-in web interface, you can simply browse to the unit's IP address and login to operate door locks, security lights and more.
- **Refrigeration:** Monitor freezer doors, temperature sensors, and power lines to warn you of problems before they cause significant losses.
- **Fire and Safety:** The DPM can also be used to monitor smoke and sprinkler alarms, as well as door and window entries to protect your people and equipment.
- **Easy, Fast Configuration**
- Configuring the DPM for features like email notifications and custom alarm point descriptions is easy with the fast, new web browser. Plus, you'll monitor the alarm status and operate control relays right from the web.

2 Specifications

Discrete Alarm Inputs:	16
Temperature Sensors:	2 Optional (1 internal, 1 external)
Temperature Thresholds:	4
Analog Alarm Inputs:	4
Analog Input Range:	–90 to 90 VDC or 4 to 20 mA
Analog Thresholds:	4
Control Relays:	2
Max Voltage:	60VDC VDC/120 VAC
Max Current:	1/2 Amp DC
Protocols:	<i>Dialup:</i> TRIP, Alpha pager <i>Serial:</i> DCPf, DCPx <i>LAN:</i> Web, SNMPv1, SNMPv2c, DCPf, DCPx
Dimensions:	7.0" L x 5.0" W x 1.5" D
Mounting:	Keyhole mounting for wall, frame, or rack
Power Input:	21mA @ -48VDC 42mA @ -24VDC (via 120VAC wall transformer)
Current Draw:	50mA
Fuse:	1/2 Amp GMT
Interfaces:	1 RJ45 10BaseT Ethernet port 1 DB9 craft port 1 - 1/8" Stereo connector for external temperature probe 1 Serial port (Dialup, RS232, RS422/485, or 202 modem)
Modem:	(Standard DPM) AT Type 33.6 Baud internal modem
Configuration:	Via Web Browser or TTY interface
Operating Temperature:	32°–140° F (0°–60° C)
Operating Humidity:	0%–95% non-condensing
RoHS:	5/6
Firmware Downloadable:	Yes (Craft/LAN)

3 Shipping List

Please make sure all of the following items are included with your DPM 216 TRIP. If parts are missing, or if you ever need to order new parts, please refer to the part numbers listed and call DPS Telecom at 1-800-622-3314.



DPM 216 TRIP
D-PK-DPMG2



DPM User Manual
D-UM-DPMG2-12001



14 ft. Ethernet Cable

D-PR-923-10B-14



6 ft. DB9M-DB9F Download Cable

D-PR-045-10A-04



Wall Mount Bracket
D-CS-532-10A-05



x 2

Two Wall Mounting Screws
1-000-80750-50



x 2

Two wall mount bracket screws
2-000-60250-01



x 2

1/2-Amp GMT Fuse
2-740-00500-00



Pads

Optional Items - Available By Request



-24V Wall Transformer
D-PR-108-10A-06
 (120VAC to -24VDC converter)



External Temperature Sensor
D-PR-984-10A-10

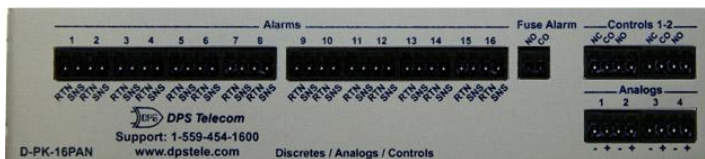


Telephone Cable 6 ft
D-PR-045-10A-01



Small WAGO Connector
2-802-01020-00

4 Available Accessories



Pluggable Bottom Panel

D-PK-16PAN

The DPM TRIP's pluggable top panel attaches to the amphenol at the bottom of the unit and allows for screw-in barrier plug connections for the DPM's alarms, analogs and control relays. It comes with an additional 10 4-pin barrier connectors (**2-820-00814-02**), 2 3-pin connectors (**2-820-00814-02**), and 1 2-pin connector (**2-820-00814-03**).

5 Tools Required

To install the DPM, you'll need the following tools:



Phillips No. 2 Screwdriver



Small Standard No. 2 Screwdriver



**PC with terminal emulator,
such as HyperTerminal**

6 Installation

6.1 DPM 216 TRIP: Top View

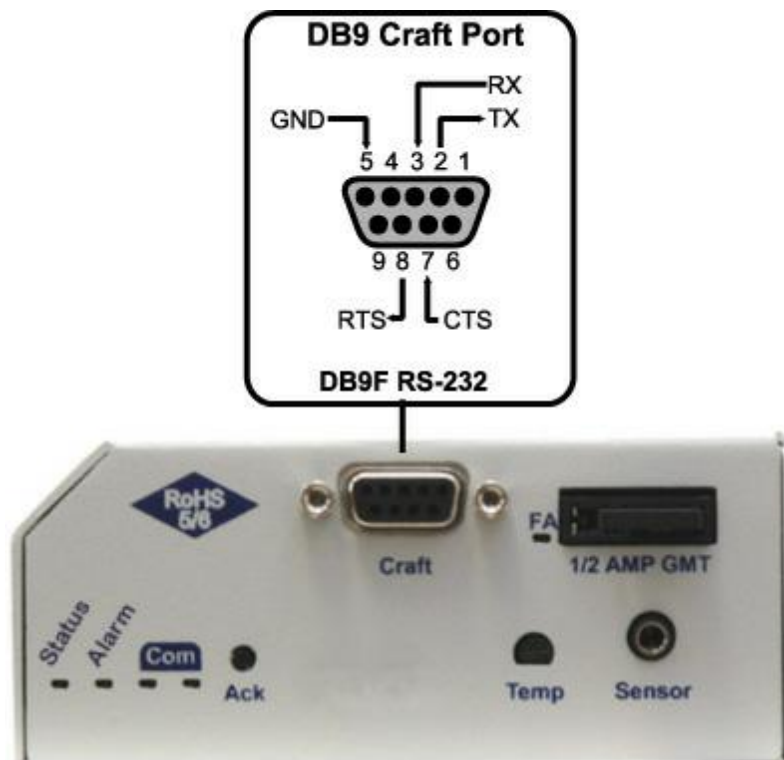


Fig. 4.1 DPM 216 TRIP top

6.1.1 Craft Port

Use the front panel craft port to connect the DPM 216 TRIP to a PC for onsite unit configuration. To use the craft port, connect the included DB9 download cable from your PC's COM port to the craft port. A Pinout is shown above for reference, but this is a standard DB9 to DB9.

6.2 DPM 216 TRIP: Bottom View

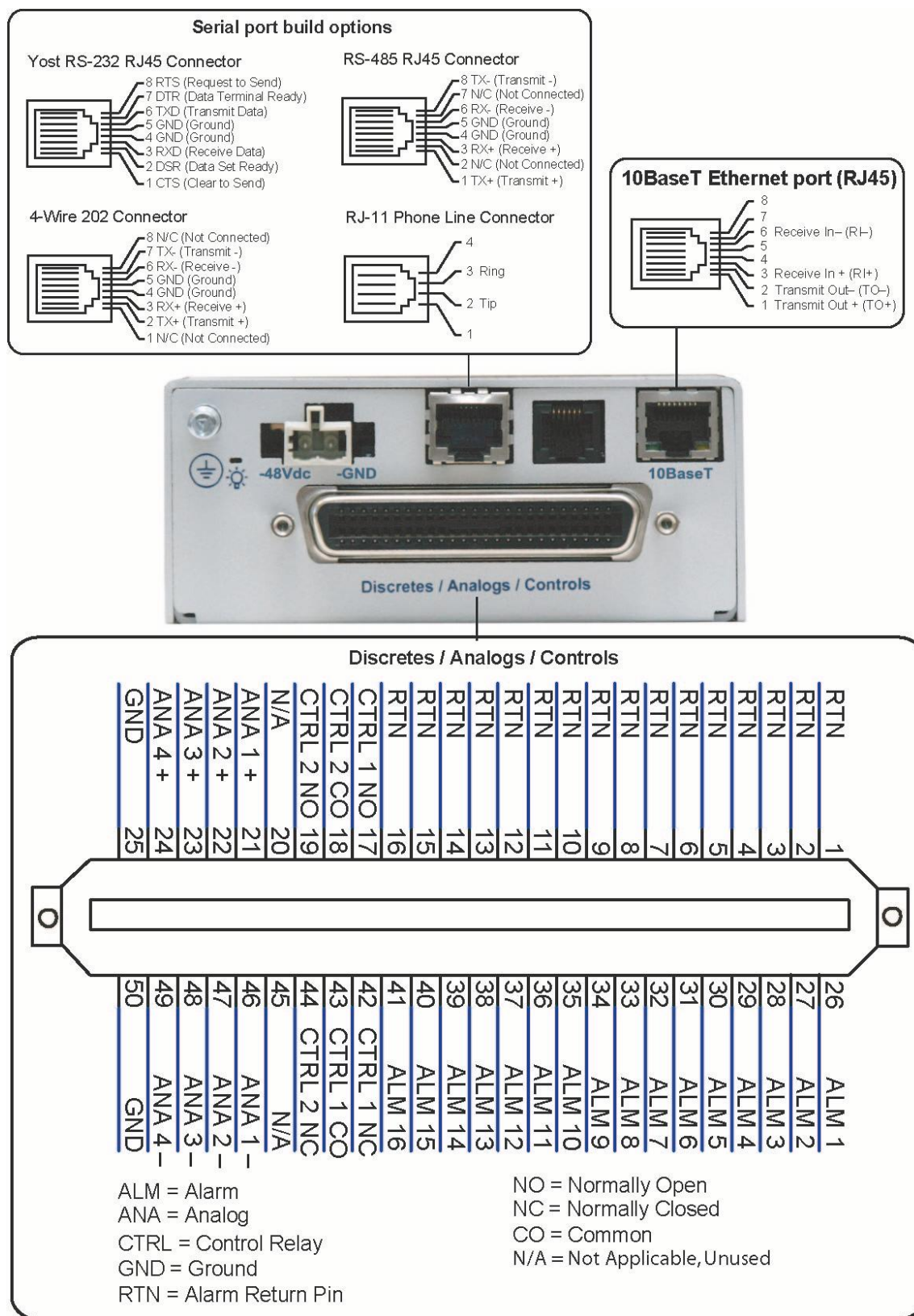



Fig. 6.1. DPM 216 TRIP bottom

6.2.1 Power Connection (-48 or -24VDC Build Option)

The DPM 216 TRIP is powered by one screw terminal barrier plug power connectors.

To connect the DPM to a power supply, follow these steps:

1. Always use safe power practices when making power connections. Be sure to remove fuses from the fuse distribution panel, as well as the back of the DPM, before making your power connections.
2. Use the grounding lug to connect the unit to earth ground. The grounding lug is next to the symbol . Insert the eyelet of the earth ground cable between the two bolts on the grounding lug (Ground cable not included).
3. Insert a battery ground into the power connector plug's right terminal and tighten the screw; then insert a battery line to the plug's left terminal and tighten its screw.
4. Insert a fuse into the fuse distribution panel and measure voltage. The voltmeter should read -40 and -70VDC (for -48VDC build option) or -18 and -36VDC (-24VDC build option).
5. The power plug can be inserted into the power connector only one way to ensure the correct polarity. Note that the negative voltage terminal is on the left and the GND terminal is on the right.
6. Insert fuse into the Power A fuse slot. The power LED should be lit green. If the LED is off, the power connection is reversed. To confirm that power is correctly connected, the status and alarm LEDs on the DPM's top panel will flash RED and GREEN indicating that the DPM application has started.

6.2.2 Serial Connection

The DPM 216 TRIP has 4 build options for its serial / dialup port. You can order your port as a **Yost RS-232, RS-485, 4-wire 202 RJ45**, or with a **dial-up modem**. The serial port is located on the back panel, where it is labeled "Primary."



Hot Tip!

If you are unsure of the serial port type on your DPM, login to MyDPS and click on the Product Information Search link. Type in the full part number of your unit and click the Submit button to access the specifications.

The serial port can be used for three different functions:

- Reach-through proxy connection for LAN-based Telnet access to switches, radios, PBXs and other equipment.
- Alarm reporting to the T/Mon NOC Remote Alarm Monitoring System over an RS-232, 485, 202, or dial-up modem.
- Dial-up notifications via your cell phone and alphanumeric pager.

Note: If the serial port is configured for alarm reporting to T/Mon NOC, the port is **not** available for use as a reach-through proxy port.

6.2.3 LAN Connection

To connect the DPM 216 TRIP to the LAN, insert a standard RJ45 Ethernet cable into the 10BaseT Ethernet port on the back of the unit. If the LAN connection is OK, the LNK LED will light **SOLID GREEN**.

6.2.4 50-Pin Alarm and Control Relay Connector

The primary connector for discrete alarms, analog alarms and control relays is the 50-pin connector on the DPM 216 TRIP's back panel.

6.2.4.1 Discrete Alarms

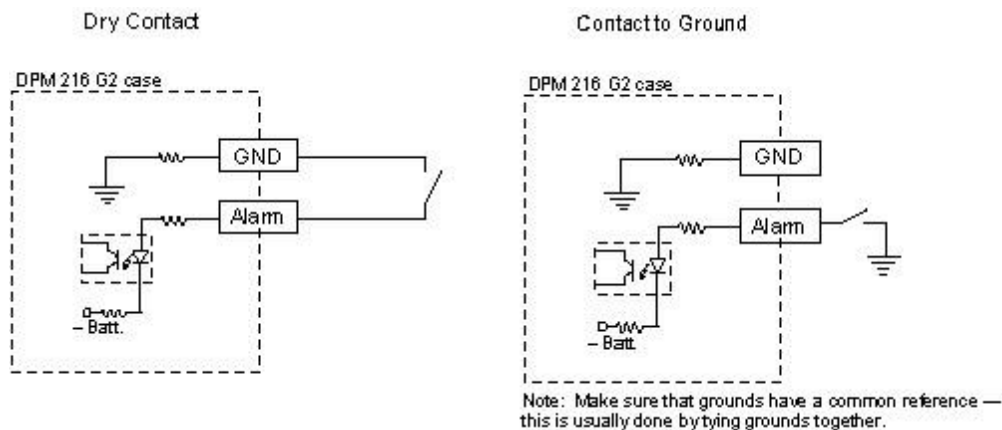


Fig. 4.5 Discrete alarm points can connect as a dry contact or a contact to ground

The DPM 216 TRIP features 16 discrete alarm inputs — also called digital inputs or contact closures. Discrete alarms are either active or inactive, so they're typically used to monitor on/off conditions like power outages, equipment failures, door alarms and so on.

The DPM's discrete alarm points are single-lead signals referenced to ground. The ground side of each alarm point is internally wired to ground, so alarm points can connect either as a dry contact or a contact to ground.

In a dry contact alarm: The alarm lead brings a contact to the ground lead, activating the alarm.

In a contact to ground alarm: A single wire brings a contact to an external ground, activating the alarm.

You can reverse the polarity of each individual discrete alarm point, so that the alarm is activated when the contact is open. This is done with a software configuration change.

6.2.4.2 Analog Alarms

The DPM 216 TRIP's 4 analog alarm inputs measure continuous ranges of voltage or current. Analog alarms are typically used to monitor battery voltage, charging current, temperature, humidity, wind speed, or other continuously changing conditions. The measurement range of the analog channels is – 90 to +90 VDC or 4 to 20 mA.

Analog #	Connection
ANA 1	User-definable; connects to the 50-pin amphenol.
ANA 2	User-definable; connects to the 50-pin amphenol.
ANA 3	User-definable; connects to the 50-pin amphenol
ANA 4	User-definable; connects to the 50-pin amphenol

6.2.4.2.1 Switching Analog Alarms to Current Operation

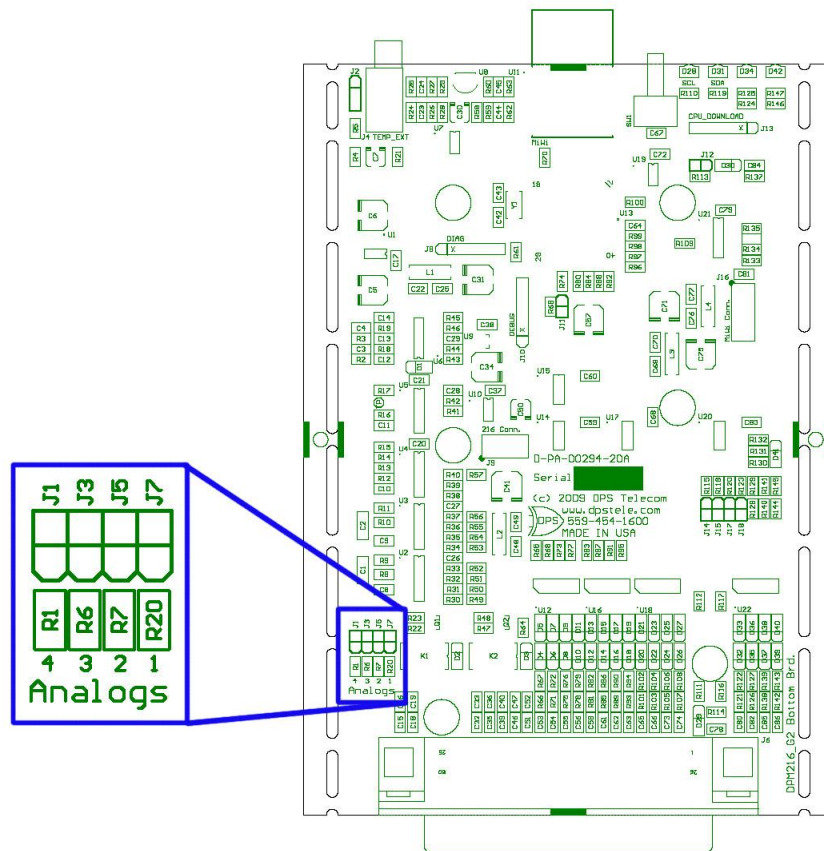


Fig. 4.6. Adjustable jumpers on the DPM 216 TRIP's bottom circuit board

By default, the analog inputs are configured to measure voltage. You can switch the analog inputs to measure current by resetting jumpers on the DPM 216 TRIP's circuit board.

To test the analog alarm voltage/current jumpers, follow these steps:

1. Make sure the DPM 216 TRIP is depowered and disconnected from all network connections.
2. Remove the screws from the sides of the bottom portion of the DPM 216 TRIP case.
3. Slide the top cover of the case off to expose the circuit board.

4. The adjustable jumpers are located on the unit's bottom board on the grounding-lug side of the unit as shown in **Fig. 4.6**. All alarm inputs can be individually configured for current or voltage operation. Remember that the default jumper position is OPEN for measuring voltage. **Note:** Each jumper inserts a 250-ohm shunt resistor across the input. This must be taken into account when defining the analog input reference scale.

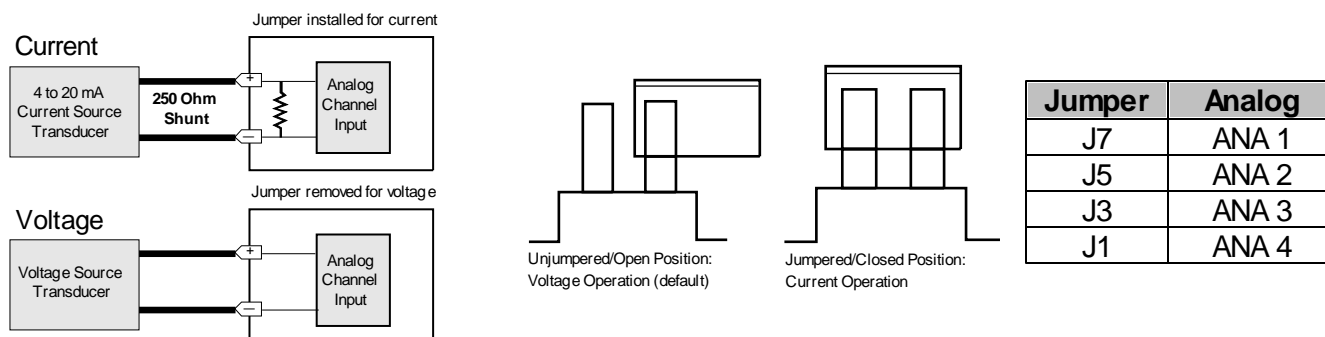


Fig. 4.7. Jumper settings for analog alarms inputs.

5. Slide the bottom cover of the case back into position and replace the screws.
6. Reconnect and power up the DPM 216 TRIP.

6.2.4.3 Optional 66 Block Connector

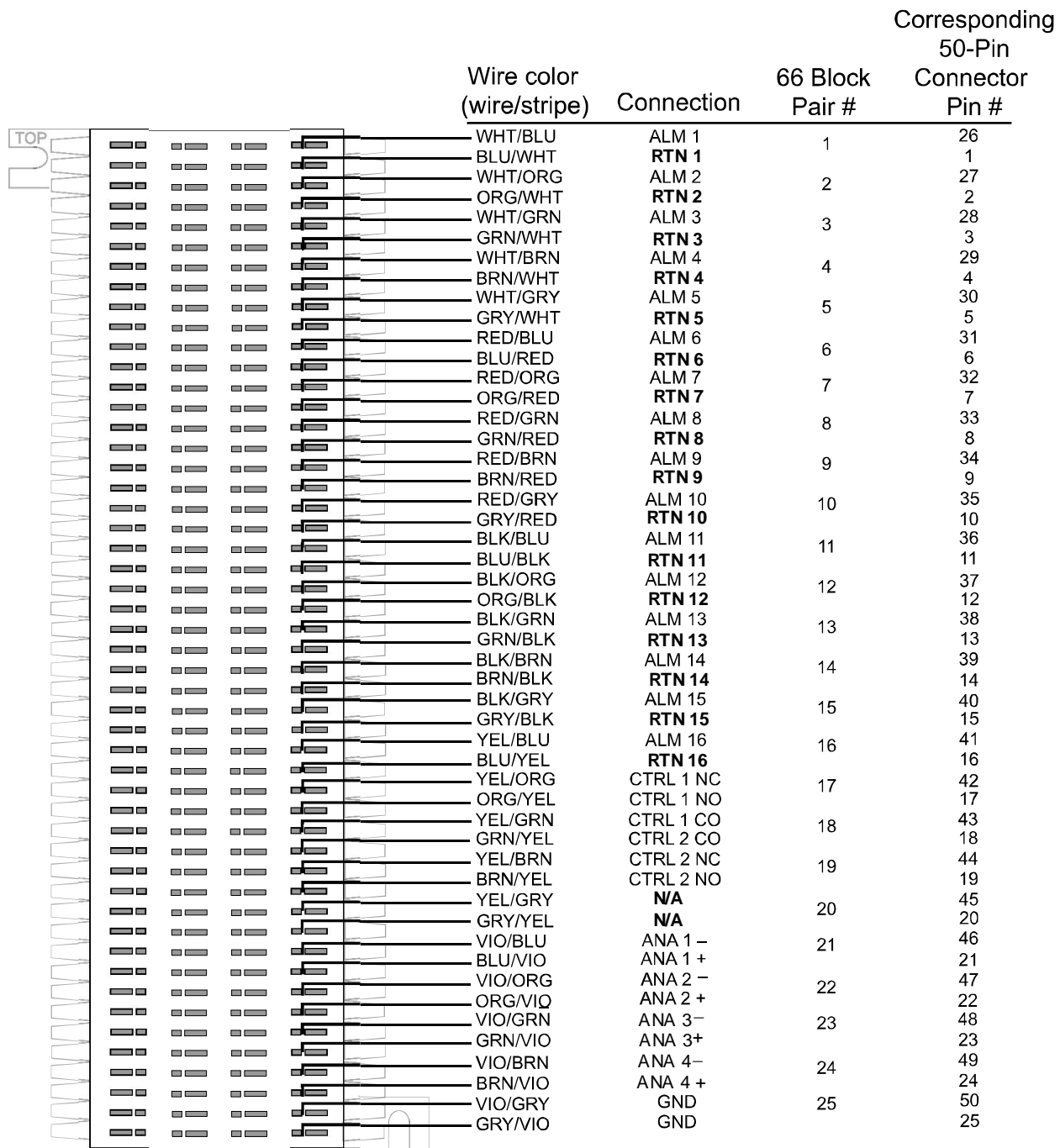
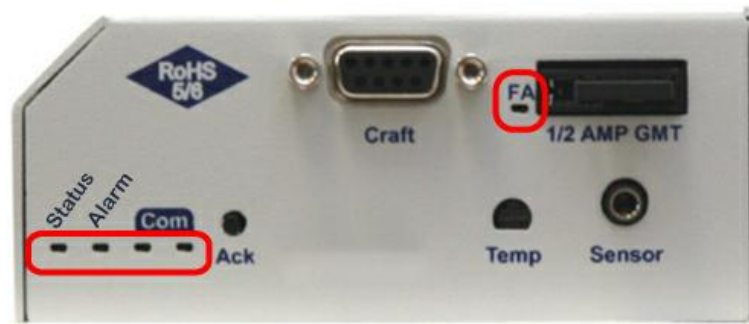


Fig. 4.4 Optional 66 block connector pinout

The DPM 216 TRIP is also available with an optional 66 Block Connector for connecting discrete alarms, analog alarms and control relays. Pinout and wire color coding for the 66 Block are shown above.

6.3 Top, Bottom, and Front Panel LEDs



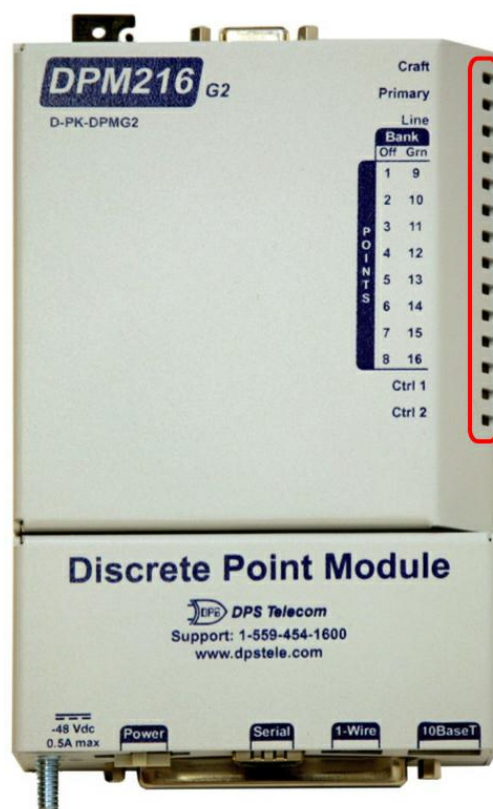
Top LEDs

LED	Status	Description
FA	Solid Red	Fuse failure
Com (Right)*	When Green	Data can transmit between the DPM's 2 system boards.
	When Off	Data cannot be sent between the 2 system boards.
Com (Left)	Flashing Green	Sending and receiving data
Status	Flashing Green	Indicates that the unit is powered and working
Alarm	Flashing Red	Indicates an alarm is set
	Off	All alarms are clear



Bottom LEDs

LED	Status	Description
PWR	Solid Green	Power supply OK
	Off	No voltage or VDC and GND leads reversed
LNK	Solid Green	Ethernet link detected
LAN	Flashing Green	Transmit traffic over LAN
	Flashing Red	Receive traffic over LAN



Front LEDs

LED	Status	Description
Craft	Flashing Green	Data transmit over craft port
	Flashing Red	Data receive over craft port
Primary	Flashing Green	Data transmit over serial
	Flashing Red	Data receive over serial
Line**	Flashing Green	Sending/receiving over modem
	Off	Modem is inactive
Bank***	When Green	Indicates that an Alarm is set on points 9-16
	When Off	Indicates that an Alarm is set on points 1-8
Points	Solid Red	Active alarm for corresponding point on both banks (e.g. points 1 and 9 are both set)
	Flashing Red	Active alarm
	Off	No alarm
Ctrl 1/ Ctrl 2	Solid Green	Control relay latched
	Off	Control relay unlatched

*This LED is the DPM's clock signal, and flashes at a regular interval.

**Only shown on models of the DPM 216 TRIP with optional modem.

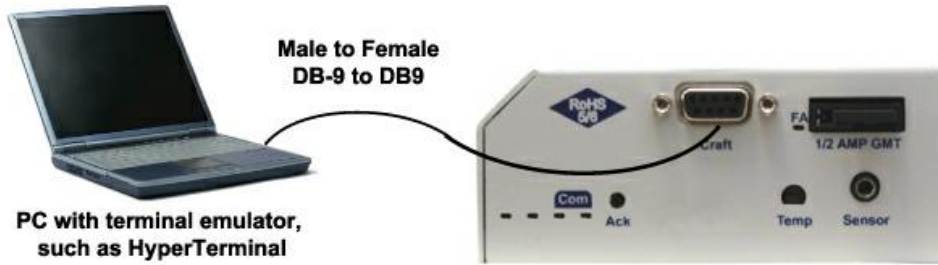
***The **Bank** light flashes green. Flashing in unison or out of sync with one of the alarm point LEDs determines which bank that alarm belongs to.

7 Quick Start: How to Connect to the DPM 216 TRIP

Most DPM users find it easiest to give the unit an IP address, subnet and gateway through the front craft port (TTY interface) to start. Once these settings are saved and you reboot the unit, you can access it over LAN to do the rest of your databasing via the Web Browser interface. **Alternative option:** You can skip the TTY interface by using a LAN crossover cable directly from your PC to the DPM 216 TRIP and access its Web Browser.

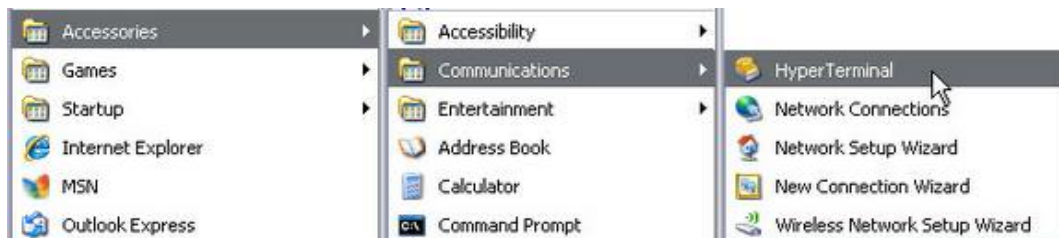
7.1 ...via Craft Port (using TTY Interface)

1. The simplest way to connect to the DPM 216 TRIP is over a physical cable connection between your PC's COM port and the unit's craft port. **Note:** You must be connected via craft port or Telnet to use the TTY interface. Make sure you are using the straight through (1 to 1) Male to Female DB9-DB9 download cable provided with your DPM 216 TRIP to make a craft port connection. We'll be using HyperTerminal to connect to the unit in the following example - however, most terminal-emulating programs should work.



To access HyperTerminal using Windows:

2. Click on the **Start** menu > select **Programs** > **Accessories** > **Communications** > **HyperTerminal**.



3. At the Connection Description screen, enter a name for this connection. You may also select an icon. The name and icon do not affect your ability to connect to the unit.



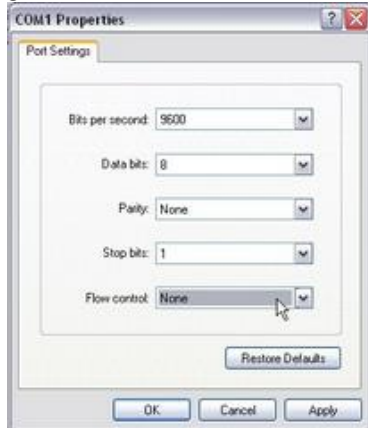
4. At the Connect To screen, select Com port you'll be using from the drop down and click OK. (COM1 is the most commonly used.)



5. Select the following COM port options:

- Bits per second: 9600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: **None**

Once connected, you will see a blank, white HyperTerminal screen. Press Enter to activate the configuration menu.

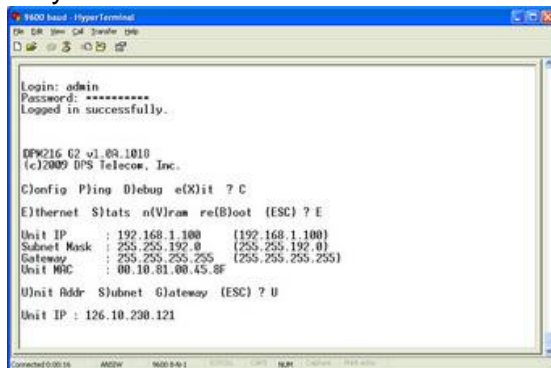


6. When prompted, enter the default user name **admin** and password **dpstelecom**.
NOTE: If you don't receive a prompt for your user name and password, check the Com port you are using on your PC and make sure you are using the cable provided.

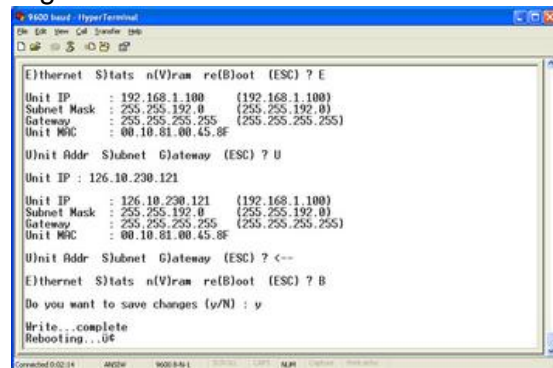
Additional cables can be ordered from DPS Telecom: *Part number D-PR-045-10A-04*



7. The DPM 216 TRIP's main menu will appear. Type C for C)onfig, then E for E)thernet. Configure the unit's IP address, subnet mask, and default gateway.

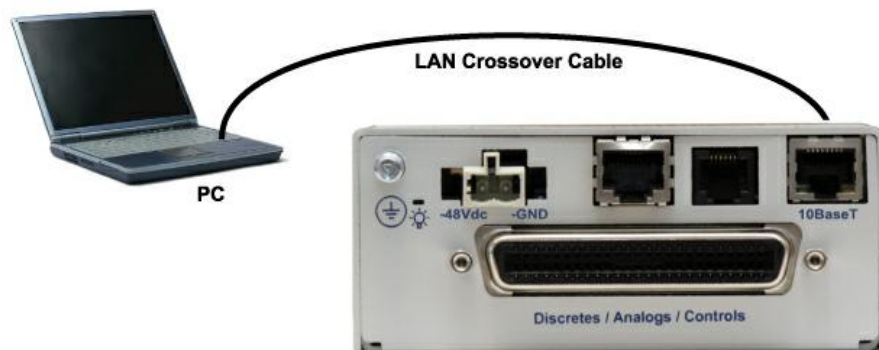


8. ESC to the main menu. When asked if you'd like to save your changes, type Y for Y)es. Reboot the DPM 216 TRIP to save its new configuration.



Now you're ready to do the rest of your configuration via LAN. Plug your LAN cable into the DPM 216 TRIP and see the section titled, "Logging On to the DPM 216 TRIP" to continue databasing using the Web Browser.

7.2 ...via LAN



Connection through Ethernet port

To connect to the DPM 216 TRIP via LAN, all you need is the unit's IP address (Default IP address is 192.168.1.100).

If you **DON'T** have LAN, but **DO** have physical access to the DPM 216 TRIP, connect using a LAN crossover cable. **NOTE:** Newer PCs should be able to use a standard straight-through LAN cable and handle the crossover for you. To do this, you will temporarily change your PC's IP address and subnet mask to match the DPM's factory default IP settings. Follow these steps:

1. Get a LAN crossover cable and plug it directly into the DPM 216 TRIP's LAN port.
2. Look up your PC's current IP address and subnet mask, and write this information down.
3. Reset your PC's IP address to **192.168.1.200**. Contact your IT department if you are unsure how to do this.
4. Reset your PC's subnet mask to **255.255.0.0**. You may have to reboot your PC to apply your changes.
5. Once the IP address and subnet mask of your computer coincide with the unit, you can access the DPM 216 TRIP via a Telnet session or via Web browser by using the unit's default IP address of **192.168.1.100**.
6. Provision the DPM 216 TRIP with the appropriate information, then **change your computer's IP address and subnet mask back to their original settings**.

Now you're ready to do the rest of your configuration via LAN. Plug your LAN cable into the DPM 216 TRIP and see "Logging On to the DPM 216 TRIP" to continue databasing using the Web Browser.

8 Basic Configuration

8.1 TTY Interface

The TTY interface is the DPM's built-in interface for basic configuration. From the TTY interface, you can:

- Edit the IPA, subnet, and gateway
- Tune the 202 modem
- Set unit back to factory defaults
- Configure data ports
- Set DCP info for T/Mon polling
- Ping other devices on the network
- Debug and troubleshoot

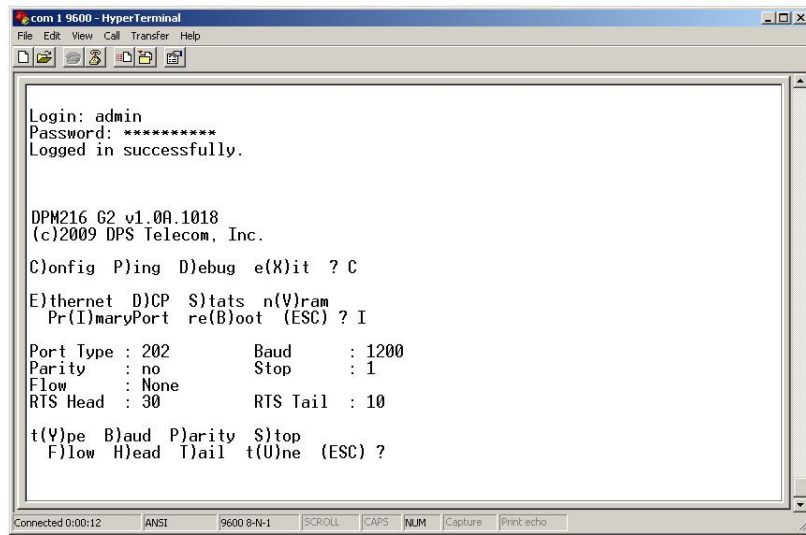
For more advanced configuration tools, please use the Web Browser Interface.

For Telnet, connect to the IP address at port 2002 to access the configuration menus after initial LAN/WAN setup. **Telnet sessions are established at port 2002, not the standard Telnet port** as an added security measure.

Menu Shortcut Keys

The letters before or enclosed in parentheses () are menu shortcut keys. Press the shortcut key to access that option. Pressing the ESC key will always bring you back to the previous level. Entries are not case sensitive.

8.2 Configure Serial Port via TTY



1 - Serial port configuration

1. To enter configuration setting for the Serial Port, login to the TTY interface and press **C)onfig > pr(I)maryPort**.
2. Press the hot keys to toggle through the following options. (* Indicates default settings:)
NOTE: Default settings may not reflect the primary interface that shipped in the unit.
 - **Port Type:** 232*, 485, 202
 - **Baud:** 115200*, 57600, 19200, 9600, 4800, 2400, 1200
 - **Parity:** None*, even, odd
 - **Flow control:** None*, hardware
 - **Stop bits:** 1*, 2
3. Set the RTS head / tail is using 202. (Carrier time) Suggested settings are: head=60; tail=40; 0,0 if using RS232.

8.3 Tune 202 Modem (Set Transmit Level)

```

com 1 9600 - HyperTerminal
File Edit View Call Transfer Help

Password: *****
Logged in successfully.

DPM216 G2 v1.0A.1018
(c)2009 DPS Telecom, Inc.

C)onfig P)ing D)ebug e(X)it ? C
E)thernet D)CP S)tats n(V)ram
Pr(I)maryPort re(B)oot (ESC) ? I

Port Type : 202      Baud      : 1200
Parity      : no      Stop      : 1
Flow        : None
RTS Head    : 30      RTS Tail   : 10

t(Y)pe B)aud P)arity S)top
F)low H)ead T)ail t(U)ne (ESC) ? U

(+)On (4)Mark (3)Space (-)Off
(7)CoarseUp (1)FineUp (2)FineDown (6)CoarseDown

Connected 0:00:15  ANSI  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo

```

2 - Tuning the 202 modem.

1. Login to the TTY interface and press **C)onfig > pr(I)maryPort > t(U)ne**.
2. Press the hot keys to turn on, then mark or space. Set the desired level (factory default is -13dBm)

8.4 Set DCP Parameters

```

com 1 9600 - HyperTerminal
File Edit View Call Transfer Help

Pr(I)maryPort re(B)oot (ESC) ? I

Port Type : 202      Baud      : 1200
Parity      : no      Stop      : 1
Flow        : None
RTS Head    : 30      RTS Tail   : 10

t(Y)pe B)aud P)arity S)top
F)low H)ead T)ail t(U)ne (ESC) ? U

(+)On (4)Mark (3)Space (-)Off
(7)CoarseUp (1)FineUp (2)FineDown (6)CoarseDown

t(Y)pe B)aud P)arity S)top
F)low H)ead T)ail t(U)ne (ESC) ? <--

E)thernet D)CP S)tats n(V)ram
Pr(I)maryPort re(B)oot (ESC) ? D

DCP Unit ID : 1
Listen DCP  : OVER SERIAL

U)nitID L)isten (ESC) ?

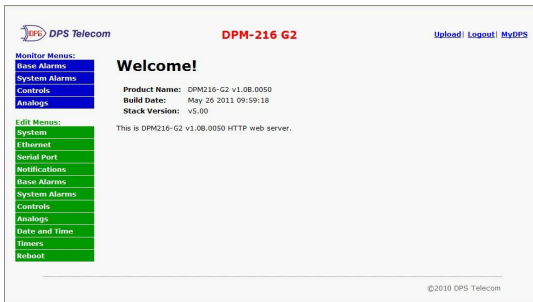
Connected 0:00:15  ANSI  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo

```

3 - Setting DCP Parameters

1. Login to the TTY interface and press **C)onfig > D)CP**.
 2. Set the DCP Address (Unit ID).
 3. Set the DCP listening type (toggle through the options). Choose over serial, over LAN*, or disabled.
- **Note:** If not using DCP to communicate with a DPS master, set the address to 0 and disable listening.

9 DPM 216 TRIP Web Browser



The DPM 216 TRIP features a built-in Web Browser Interface that allows you to manage alarms and configure the unit through the Internet or your Intranet. You can quickly set up alarm point descriptions, view alarm status, issue controls, and configure paging information, and more using most commonly used browsers.

NOTE: Up to 4 users may simultaneously access the DPM 216 TRIP via the Web.

9.1 Logging on

For Web Interface functionality, the unit must first be configured with some basic network information. If this step has not been done, refer to the section "Quick Start: How to Connect to the DPM 216 TRIP" for instructions on initial configuration setup.

1. To connect to the DPM 216 TRIP from your Web browser, enter its IP address in the address bar of your web browser. It may be helpful to bookmark the logon page to avoid entering this each time.
2. After connecting to the unit's IP address, enter your login information and click OK. **NOTE:** The factory default username is "**admin**" and the password is "**dpstelecom**".
3. In the left frame you will see the **Monitor** menu (blue) and **Edit** menu (green) The Monitor menu links are used to view the current status of alarms. The Edit menu is used to change the unit's configuration settings. All the software configuration will occur in the **Edit** menu. The following sections provide detailed information regarding these functions.



Fig. 8.1. Enter your password to enter the DPM 216 TRIP Web Browser Interface

9.1.1 Changing the Default Password

The password can be configured from the **Edit > System** screen. The minimum password length is four characters; however, DPS recommends setting the minimum password length to at least five characters.

Use the following steps to change the logon password:

1. From the **Edit** menu select **System**.
2. Enter the new user name in the **User** field.
3. Enter the new password in the **Password** field.
4. Click the **Save** button.

Fig. 8.2 - Global System Settings section of the Edit > System menu

NOTE: You will see the following popup when making changes to the DPM 216 TRIP from the **Edit** menu. It will appear when confirming your changes to the database, either by clicking **Next** in the setup wizards or the **Save** button.



Fig. 8.3 - Commit to NVRAM popup

10 Most Important How-Tos

The next few sections of this manual will walk you through some of the most common tasks for using the DPM216 TRIP. You will learn how to send email notifications, and send SNMP traps to your alarm master- all using the Web browser. For details on entering your settings into each Web browser menu, see the section titled "Advanced Configuration."

10.1 How to Setup Alarm Reporting to T/Mon (TRIP)

1. Set your TRIP ID and calling parameters from the Edit > System screen. (See "Edit Menu Field Descriptions") The TRIP ID must match the site number in T/Mon.

TRIP Dialup Settings	
TRIP Unit ID	6
<input checked="" type="radio"/> Always call <input type="radio"/> Call only if DCP is inactive	
Modem Settings	Configure Modem

2. Navigate to the **Notifications** screen, click the notification, 1-8, you want to configure, and check the **Enable Notification** box to turn it "on." Now, select the **Send TMon Notification** radio button and click **Next**.

No.	Stat.	Type	Server	Time Window 1	Time Window 2
<u>1</u>	ON	T/Mon	4941681	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time

↓

Notification 1

Notification Setting	
<input checked="" type="checkbox"/>	Enable Notification
<input type="radio"/>	Send SNMP Notification
<input type="radio"/>	Send Alpha Notification
<input checked="" type="radio"/>	Send TMon Notification

Next >

Cancel

Fig. 9.15

3. At the **T/Mon Notification** screen, you'll enter the phone numbers for your primary and secondary T/Mon (if applicable). Click **Next**.

Notification 1 (T/Mon)

T/Mon Notification (TRIP via Dialup)	
Primary T/Mon phone	4941681
Secondary T/Mon phone	

Fig. 9.16

5. At the **Schedule** screen, you'll select the exact days/times you want to send TRIP notifications to T/Mon. You can set 2 schedules per notification. For example, you may want to send notifications after hours or at certain times during the week, and at different hours on the weekend. Use the check boxes to select the days of the week, and select the time from the drop down menus. Click **Finish**. To try a test notification, click the **Test** button (See next step.)

Notification 1 ([Schedule](#))

No.	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Notification Time	
1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Any Time	8 h 0 min AM to 4 h 59 min PM
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Any Time	10 h 0 min AM to 2 h 59 min PM

Fig. 9.17

6. If you chose to test the notification, you will see the popup below. Click **OK** to send a test Alpha notification.



Fig. 9.18

NOTE: This test only means that your notification settings are correct, but you still need to assign the notification to an alarm point.

10.2 How to Send SNMP Traps

1. Click on the **System** button in the **Edit** menu. Enter the **SNMP GET** and **SNMP SET** community strings for your network, then click **Save**. The typical SNMP SET and GET community strings for network devices is "public". As an added security measure, our default is "dps_public".

System Settings

Global System Settings

Name	DPM216 G2 TRIP
Location	
Contact	559-454-1600
"From" E-mail Address	DPM216@dpstele.com
SNMP GET String	dps_public
SNMP SET String	dps_public
User	admin
Password	*****

DCP Responder Settings

DCP Unit ID	1	DCPx
<input checked="" type="radio"/> Listen DCP over LAN <input type="radio"/> Disable Listening		
DCP LAN	2001	UDP
DCP Serial	Configure Primary Serial Port	

TRIP Dialup Settings

TRIP Unit ID	6
<input checked="" type="radio"/> Always call <input type="radio"/> Call only if DCP is inactive	
Modem Settings	Configure Modem

System Controls

Initialize Configuration	<input type="button" value="Initialize"/>
Backup Configuration	<input type="text" value="config.bin"/> <input type="button" value="Save"/>
Restore Configuration	Upload

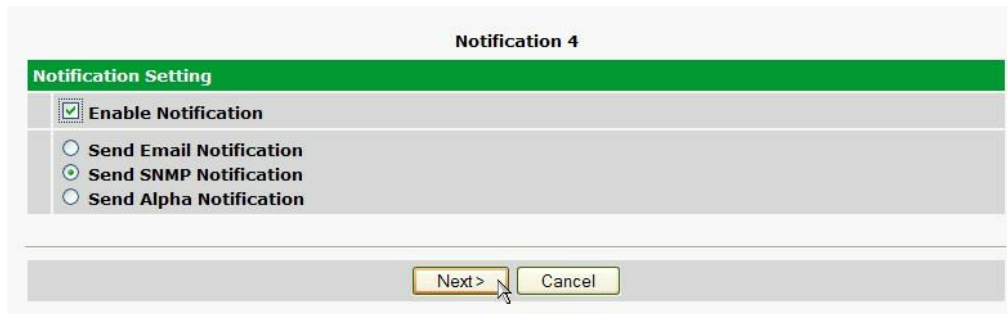
Fig. 9.8

2. Click on the **Notifications** button in the **Edit** menu. You can setup as many as 8 different notifications. Begin the setup "wizard" by clicking on a notification number. In this example, we'll setup Notification 4 to send SNMP traps to your alarm master.

Notifications					
No.	Stat.	Type	Server	Time Window 1	Time Window 2
1	OFF	Email		No days selected Any Time	No days selected Any Time
2	ON	Email	123.456.789.00	Mon,Tue,Wed,Thu,Fri, 06:00AM to 06:00PM	Sun,Sat, Any Time
3	OFF	Email		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
4	OFF	Email		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
5	OFF	Email		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
6	OFF	Email		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
7	OFF	Email		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
8	OFF	Email		Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time

Fig. 9.9

3. At the **Notification Setting** screen, check the **Enable Notification** box to turn "on" Notification 4. Now, select the **Send SNMP Notification** button and click Next.



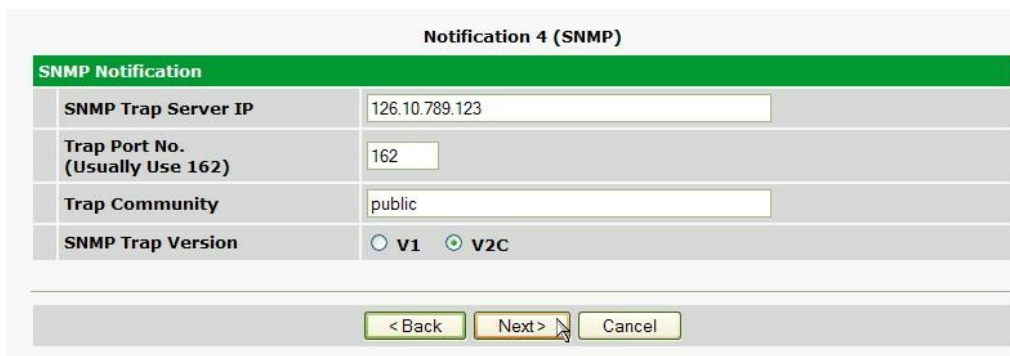
The screenshot shows the 'Notification Setting' screen for 'Notification 4'. It has a green header bar with the title 'Notification Setting'. Below the header, there is a table with four rows. The first row has a checked checkbox and the text 'Enable Notification'. The second row has a radio button and the text 'Send Email Notification'. The third row has a selected radio button (indicated by a green dot) and the text 'Send SNMP Notification'. The fourth row has a radio button and the text 'Send Alpha Notification'. At the bottom of the screen, there are two buttons: 'Next >' and 'Cancel'. A mouse cursor is pointing at the 'Next >' button.

Notification Setting	
<input checked="" type="checkbox"/>	Enable Notification
<input type="radio"/>	Send Email Notification
<input checked="" type="radio"/>	Send SNMP Notification
<input type="radio"/>	Send Alpha Notification

Next > Cancel

Fig. 9.10

4. At the **SNMP Notification** screen, you'll enter your network's SNMP settings. Enter the **IP address** of your SNMP Trap Server, the **Trap Port Number** (usually 162) and the **Trap Community** password. Choose from SNMPv1 or v2c traps, then click **Next**.



The screenshot shows the 'SNMP Notification' screen for 'Notification 4 (SNMP)'. It has a green header bar with the title 'SNMP Notification'. Below the header, there is a table with four rows. The first row is 'SNMP Trap Server IP' with the value '126.10.789.123'. The second row is 'Trap Port No. (Usually Use 162)' with the value '162'. The third row is 'Trap Community' with the value 'public'. The fourth row is 'SNMP Trap Version' with two radio buttons: 'V1' and 'V2C'. The 'V2C' radio button is selected (indicated by a green dot). At the bottom of the screen, there are three buttons: '< Back', 'Next >', and 'Cancel'. A mouse cursor is pointing at the 'Next >' button.

SNMP Notification	
SNMP Trap Server IP	126.10.789.123
Trap Port No. (Usually Use 162)	162
Trap Community	public
SNMP Trap Version	<input type="radio"/> V1 <input checked="" type="radio"/> V2C

< Back Next > Cancel

Fig. 9.11

5. At the **Schedule** screen, you'll select the exact days/times you want to receive SNMP notifications. You can set 2 schedules per notification. For example, you may want to receive notifications at certain times during the week, and at different hours on the weekend. Use the check boxes to select the days of the week, and select the time from the drop down menus. Click **Finish**. To try a test notification, click the **Test** button (See next step.)

Notification 4 (Schedule)								
No.	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Notification Time
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="radio"/> Any Time <input type="radio"/> 12 h 0 min AM to 11 h 59 min PM
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="radio"/> Any Time <input type="radio"/> 12 h 0 min AM to 11 h 59 min PM

< Back Finish Test Cancel

Fig. 9.12

6. If you chose to test the SNMP notification, you will see the popup below. Click **OK** to send a test SNMP alarm notification. Confirm your settings by checking your alarm master to see if the SNMP trap was received.



Fig. 9.13

NOTE: This test only means that your notification settings are correct, but you still need to assign the notification to an alarm point.

10.3 How to Send Text Msgs to Your Cell

The optional 33.6K internal modem provides full support for alphanumeric paging, so you can automatically send detailed notifications and instructions to alphanumeric pagers, cell phones, and PDAs.

1. Click on the **Notifications** button in the **Edit** menu. You can setup as many as 8 different notifications. Begin the setup "wizard" by clicking on a notification number. In this example, we'll setup Notification 1 to send an alphanumeric page.
2. Navigate to the **Notifications** screen, click the notification, 1-8, you want to configure, and check the **Enable Notification** box to turn it "on." Now, select the **Send Alpha Notification** radio button and click **Next**.

Fig. 9.14

3. At the **Alpha Notification** screen, you'll enter your notification settings. Enter the **Phone number to call** for your alphanumeric pager. For **Dial Init String**: Do not enter initialization strings unless directed by your network administrator or DPS Tech Support staff. The dial initialization string is sent to the modem before making the call. Enter a **PIN** (Personal Identification Number) for TAP terminal Authentication. Click **Next**.

Fig. 9.15

Carrier	TAP #
Verizon	866-823-0501
AT&T	800-909-4602
Sprint PCS	1-888-866-1727

Note: These TAP numbers may change or become discontinued by the issuer.

5. At the **Schedule** screen, you'll select the exact days/times you want to receive Alpha notifications. You can set 2 schedules per notification. For example, you may want to send alpha pages after hours or at certain times during the week, and at different hours on the weekend. Use the check boxes to select the days of the week, and select the time from the drop down menus. Click **Finish**. To try a test notification, click the **Test** button (See next step.)

Notification 1 (Schedule)								
No.	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Notification Time
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/> Any Time <input type="radio"/> 12 h 0 min AM to 11 h 59 min PM
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="radio"/> Any Time <input type="radio"/> 12 h 0 min AM to 11 h 59 min PM

Fig. 9.16

6. If you chose to test the Alpha notification, you will see the popup below. Click **OK** to send a test Alpha notification.



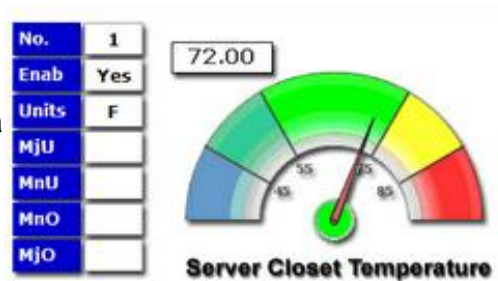
Fig. 9.17

NOTE: This test only means that your notification settings are correct, but you still need to assign the notification to an alarm point.

10.4 How to Setup Analog Alarms

This section explains how to setup a user-definable analog alarm.

The following example shows how to setup analog # 1 as a temperature alarm in a Server Closet.



1. Login to the DPM web browser and click the **Edit > Analogs** menu. Click the **Enable** checkbox next to the analog channel number to turn on the analog input.

Fig. 9.19

2. Next, give this analog alarm a **Description**.
3. Click the **Advanced** link at the top of the **Edit > Analogs** menu to edit more specific information. Start by selecting thresholds. The threshold values in this example will be temperatures values. These thresholds tell the DPM that I want be notified of when the temperature rises above or drops below these set levels. In this example, we are selecting:

Major Under Temp:	45° F
Minor Under Temp:	55° F
Minor Over Temp:	78° F
Major Over Temp:	85° F

3. **On Set and Clear:** Here there are fields labeled “On Set” and “On Clear”. These allow you to customize the description of an alarm fail and clear. For example, if you’re monitoring a Propane tank, it might make more sense to see the word “Empty” instead of “Alarm”.

4. **QTime:** Stands for Qualification time. Here, the qualification time is set for 1 minute. By clicking this link, the help text will explain that 1S=1 second, 1M=1 Minute, and 1H=1hour. Typically, when an analog sensor crosses a threshold, it does not stay there – It usually waivers across the threshold value. This may cause many alarms, and possible many nuisance emails. Here, we will set the qualification time for 1 minute, meaning we will only see this alarm if the value is across the threshold for 1 minute or longer. The same is true for the clear condition – We only want to know it has cleared if it stays clear for longer than 1 minute.
5. **Display Units:** This is the 3 unit value the DPM will display as the label for the units you want to measure. This field is only used for readability - It does not affect how the DPM works with your analog sensor. For this example, we want to show “F” for Fahrenheit. Other entries you might want to use for analog measurements are “%H” for Percent Humidity, “Knt” for Knots (wind speed), “LBS” pounds of pressure, etc.
6. **High/Low Reference:** The Low and High Reference values are how the DPM will determine the temperature based off the input voltage. You will find these values in the documentation that came with the sensor you are using. The DPM is trying to build a linear equation to give you the most accurate results. For example, if you are measuring battery voltage, you’d want the DPM to display - 54VDC when the input voltage is in fact -54VDC. However, if you’re measuring temperature instead, this relationship won’t always be a 1:1 ratio.

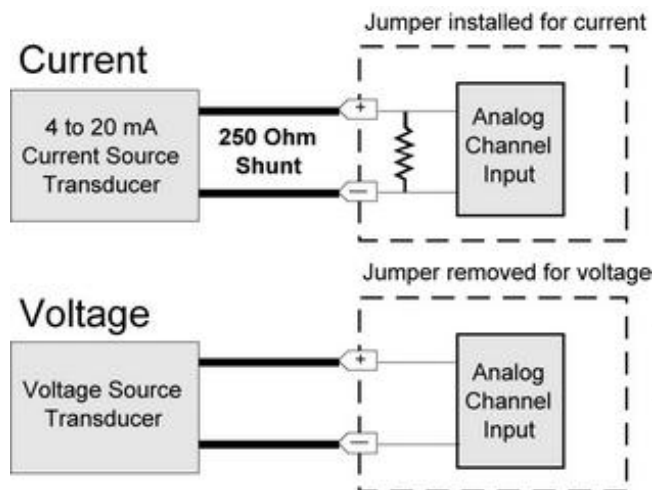


Fig. 9.20

Example, this temperature sensor is a current loop sensor that outputs 4-20mA. The DPM uses a 250 Ohm resistor to convert current to voltage measurement. **Ohms law says:**

$$4\text{mA} \times 250 \text{ Ohms} = (0.004 \times 250) = 1\text{VDC}$$

AND

$$20\text{mA} \times 250 \text{ Ohms} = (0.020 \times 250) = 5\text{VDC}$$

The documentation that came with this sensor explains how 4 - 20 mA translates temperature. In this case:

$$4\text{mA (or 1VDC)} = 32^{\circ} \text{F}$$

AND

$$20\text{mA (or 5VDC)} = 131^{\circ} \text{F}$$

Therefore, my reference values are 1 = 32 and 5 = 131.

Fig. 9.21

9. Lastly, pick an **analog gauge** that best fits this sensor. Before you save, review the **Threshold Values** you entered earlier. These might have been recalculated based off the newly entered reference points. **Reboot the DPM to save your changes.**
10. Log back into the unit and click **Analogs** from the (blue) **Monitor menu**. Now you should be able to view your new analog gauge and its current value.



Fig. 9.22

11. Click the **Classic View** link at the top of the page to switch from **Gauge View**. Classic view shows just the raw values of your analog sensor.

10.5 How to Tune the 202 Modem

The following steps are only used if your DPM build includes a 202 modem.

1. Click on the **Edit > Serial Port**.
2. When "202" is chosen at the **Port Type**, the "Tune 202" link will appear at top of the screen. Click the link.

DPS Telecom **DPM216 G2** [Upload](#) [Logout](#) [MyDPS](#)

Monitor Menus:
 Base Alarms
 System Alarms
 Controls
 Analogs
 Event Log

Edit Menus:
 System
 Ethernet
 Serial Port
 Notifications
 Base Alarms

Primary Serial Port Configuration

Location	Port Configuration	Reach-Through
Primary port located in the back of the unit. Tune 202	Port Type: 202 Baud: 9600 Parity: 8-bit data, no parity Stop Bits: 1 RTS head: 0 RTS tail: 0 Flow Control: None	<input type="checkbox"/> Enable Reach-Through Port: 3000 Type: TCP

[Reset](#) [Save](#)

Fig. 9.23

3. Click the buttons to adjust the **Signal** and **Level**.

Tune 202 Modem

Signal	Level
On	Coarse Up
Mark	Fine Up
Space	Fine Down
Off	Coarse Down

Fig. 9.24

11 Configuring Your DPM via the Web Interface

11.1 System

From the **Edit > System** menu, you will configure and edit the global system, T/Mon and control settings for the DPM 216 TRIP.

DPS Telecom **DPM216 G2 TRIP** [Upload](#) [Logout](#) [MyDPS](#)

Monitor Menus:

- Base Alarms
- System Alarms
- Controls
- Analogs

Edit Menus:

- System
- Ethernet
- Serial Port
- Notifications
- Base Alarms
- System Alarms
- Controls
- Analogs
- Date and Time
- Timers
- Reboot

System Settings

Global System Settings

Name	DPM216 G2 TRIP
Location	
Contact	559-454-1600
"From" E-mail Address	DPM216@dpstele.com
SNMP GET String	dps_public
SNMP SET String	dps_public
User	admin
Password	*****

DCP Responder Settings

DCP Unit ID	1	DCPx
<input checked="" type="radio"/> Listen DCP over LAN <input type="radio"/> Disable Listening		
DCP LAN	2001	UDP
DCP Serial	Configure Primary Serial Port	

TRIP Dialup Settings

TRIP Unit ID	6
<input checked="" type="radio"/> Always call <input type="radio"/> Call only if DCP is inactive	
Modem Settings	Configure Modem

System Controls

Initialize Configuration	<input type="button" value="Initialize"/>
Backup Configuration	<input type="text" value="config.bin"/> <input type="button" value="Save"/>
Restore Configuration	Upload

Fig. 10.1 - The Edit > System menu

Global System Settings	
Name	A name for this DPM 216 TRIP. (Optional field)
Location	The location of this DPM 216 TRIP. (Optional field)
Contact	Contact telephone number for the person responsible for this DPM 216 TRIP. (Optional field)
"From" E-mail Address	The email address that the DPM will use to send all email notifications. (See Notifications later in this chapter for details on email notifications.)
SNMP GET String	The community name for SNMP GET requests
SNMP SET String	The community name for SNMP SET requests
User	Used to change the username for logging into the unit.
Password	Used to change the password for logging into the unit (case-sensitive).
Send to all notification	The DPM is capable of sending up to 8 different notifications for alarms with multiple

Global System Settings	
devices/Escalate Notifications	<p>notification types per alarm point. Use the radio button to determine how you want the DPM to send enabled notifications.</p> <ul style="list-style-type: none"> • Send to all notification devices sends all enabled notifications for a particular point when an alarm sets. • Escalate Notifications tells the DPM to send enabled notifications in order, 1-8, until a successful notification is sent. (ex. Notifications 1, 3, and 8 are enabled for a point. Notification 1 fails, setting a system alarm, so the DPM will attempt to send 3 next. Notification 3 is successful, so the DPM will not send notification 8.)
DCP Responder Settings (For use with T/Mon NOC)	
DCP Unit ID	User-definable ID number for this DPM 216 TRIP (DCP Address).
Listen DCP	Choose to listen DCP over LAN or serial. May also be disabled.
DCP LAN	Enter the DCP port for this DPM 216 TRIP (UDP/TCP port).
TRIP Unit ID	The site number to use when communicating over dialup to T/Mon
Call Selection	Choose whether you want the DPM to always dial, or only to call if the unit is not being polled via DCP (also known as "backup mode").
Modem Settings	Click here to edit your DPM modem's ring count and Dial Initialization string
System Controls	
Initialize Configuration	Used to restore all factory default settings to the DPM 216 TRIP. Do not initialize the non-volatile RAM (NVRAM) unless you want to re-enter all of your configuration settings again.
Backup Configuration	Saves your current configuration to a .bin file.
Restore Configuration	Clickable link that takes you to the Firmware Load screen, where you'll browse to the config file you've saved on your PC.

11.2 Ethernet

The **Edit > Ethernet** menu allows you to define and configure Ethernet settings.

Ethernet Settings	
Unit MAC	00.10.81.00.45.DE
Host Name	()
Enable DHCP	<input type="checkbox"/>
Unit IP	10.0.4.123 (10.0.4.123)
Subnet Mask	255.255.0.0 (255.255.0.0)
Gateway	10.0.0.254 (10.0.0.254)
Ethernet Settings	
DNS Server 1	255.255.255.255 (255.255.255.255)
DNS Server 2	255.255.255.255 (255.255.255.255)
<input type="button" value="Reset"/> <input type="button" value="Save"/>	

Fig. 10.2 - The Edit > Ethernet menu

Ethernet Settings	
Unit MAC	Hardware address of the DPM 216 TRIP. (Not editable - For reference only.)
Host Name	Used only for web browsing. Example: If you don't want to remember this DPM's IP address, you can type in a name in this field, such as DPM216TRIP. Once you save and reboot the unit, you can now browse to it locally by simply typing in "DPM216TRIP" in the address bar. (no "http://" needed).
Enable DHCP	Used to turn on Dynamic Host Connection Protocol. NOT recommended, because the unit is assigned an IP address from your DHCP server. The IP you've already assigned to the unit becomes inactive. Using DHCP means the unit will NOT operate in a T/Mon environment.
Unit IP	IP address of the DPM 216 TRIP.
Subnet Mask	A road sign to the DPM 216 TRIP, telling it whether your packets should stay on your local network or be forwarded somewhere else on a wide-area network.
Gateway	An important parameter if you are connected to a wide-area network. It tells the DPM which machine is the gateway out of your local network. Set to 255.255.255.255 if not using. Contact your network administrator for this info.
Ethernet Settings	
DNS Server 1	Primary IP address of the domain name server. Set to 255.255.255.255 if not using.
DNS Server 2	Secondary IP address of the domain name server. Set to 255.255.255.255 if not using.

11.3 Serial Ports

The **Edit > Serial Port** menu allows you to change settings depending on the port type of your DPM. From this menu, you can select a mode of operation, tune the 202 modem, and enable reach-through serial port functionality.

Note: To configure your serial port, make sure to select the correct Port Type from the drop-down menu.

Primary Serial Port Configuration		
Location	Port Configuration	Reach-Through
Primary port located in the back of the unit.	Port Type: 232 Baud: 9600 Parity: 8-bit data, no parity Stop Bits: 1 RTS head: 0 RTS tail: 0 Flow Control: None	<input type="checkbox"/> Enable Reach-Through Port: 3000 Type: TCP
<div>Reset Save</div>		

Fig. 10.3 - The Edit > Serial Ports menu

Location	
A reminder that your primary serial port is located on the back of the DPM 216 TRIP chassis.	
Port Configuration	
Port Type	Select the serial port for your build of the DPM. Choose from 202, 232, 485...
Baud, Parity, Stop Bits, and Flow Control	Select the appropriate settings from the drop-down menu.
RTS Head	Only used if your DPM was built with a 202 modem. The most commonly used value is 30.
RTS Tail	Only used if your DPM was built with a 202 modem. The most commonly used value is 10.
Flow Control	
Reach-Through	
Enable Reach-through	Checking this box enables the port to be used as a terminal server. Most commonly used to Telnet through the port over LAN to a hub, switch, or router. From a command prompt, type the following (<i>note the spaces between each entry</i>): telnet [IP address] [port] Example: telnet 192.168.1.100 3000
Port	Port number used for reach-through to a serial device.
Type	Select TCP or UDP traffic to be passed through to a serial device.

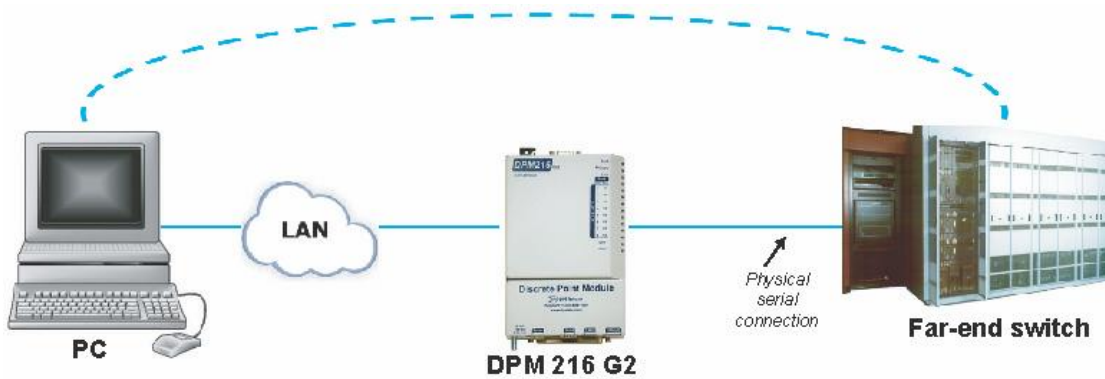


Fig. 10.4 - Topology of using the serial port for reach-through

11.4 Notifications

From the initial **Edit > Notifications** menu, you will see which of the 8 notifications are enabled, their server, and schedule. Click on the number link for one of the notifications to begin configuration.

Notifications					
No.	Stat.	Type	Server	Time Window 1	Time Window 2
1	ON	T/Mon	4941681	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
2	ON	Alpha	559-454-1600	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time
3	ON	SNMP	10.0.223.199	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time	Sun,Mon,Tue,Wed,Thu,Fri,Sat, Any Time

Fig. 10.5 - The Edit > Notifications menu

Once you've chosen which notification you want to setup, use the drop-down box to determine what events you'd like to be notified of (Alarms, Clears, or Both). Then choose a notification method and click **Next >** to continue.

Notification 1	
Notification Setting	
<input checked="" type="checkbox"/>	Enable Notification
<input type="radio"/>	Send SNMP Notification
<input type="radio"/>	Send Alpha Notification
<input checked="" type="radio"/>	Send TMon Notification
<div> <div>Next ></div> <div>Cancel</div> </div>	

Fig. 10.6 - The Notification Setting menu

The DPM TRIP is capable of sending SNMP Traps, Alpha Pager, or TRIP notifications. The next three sub-sections contain explanations of the available configuration fields for each notification type.

11.4.1 SNMP Notification Setup

Notification 4 (SNMP)

SNMP Notification	
SNMP Trap Server IP	126.10.789.123
Trap Port No. (Usually Use 162)	162
Trap Community	public
SNMP Trap Version	<input type="radio"/> V1 <input checked="" type="radio"/> V2C

Fig. 10.8 - Editing SNMP notification settings

SNMP Notification	
SNMP Trap Server IP	The SNMP trap manager's IP address.
Trap Port No.	The SNMP port (UDP port) set by the SNMP trap manager to receive traps, usually set to 162.
Trap Community	Community name for SNMP TRAP requests.

11.4.2 Alpha Pager Notification Setup

Notification 2 (Alpha)

Alpha Notification	
Phone number to call	559-454-1600
Dial Init String	
PIN	4955

Fig. 10.9 - Editing Alpha notification settings

Alpha Notification	
Phone number to call	Phone number to send the notification.
Dial Init String	Sent to the modem before making the call. Do NOT enter initialization strings unless directed by a network administrator or DPS Tech Support staff.
PIN	Personal Identification Number for TAP terminal Authentication.

11.4.3 T/Mon Notification Setup (TRIP)

Notification 1 (T/Mon)

T/Mon Notification (TRIP via Dialup)	
Primary T/Mon phone	<input type="text" value="4941681"/>
Secondary T/Mon phone	<input type="text"/>

Fig. 10.10 Configuring Notifications for T/Mon (TRIP)

TRIP T/Mon Notification	
Primary T/Mon Phone	Enter the Phone Number of your primary T/Mon Master
Secondary T/Mon Phone	Enter the Phone Number of your secondary T/Mon

11.4.4 Schedule

Once you've configured your notifications, you'll be taken to the schedule menu, where you will tell the DPM 216 TRIP which days and times you want this particular alarm notification sent.

Notification 4 ([Schedule](#))

No.	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Notification Time	
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="radio"/> Any Time	<input type="radio"/> 12 h 0 min AM to 11 h 59 min PM
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="radio"/> Any Time	<input type="radio"/> 12 h 0 min AM to 11 h 59 min PM

Fig. 10.10 - The Schedule creation screen

Notification Scheduling	
Days of the week	From either Schedule 1 or 2, check which days you want to receive notifications.
Any Time	Select to tell the DPM 216 TRIP you want to receive alarm notifications at any time for the day(s) you've selected.
Notification Time	Used to tell the DPM to only send alarm notifications during certain hours on the day(s) you've selected.

When you've configured your notification schedule, click **Test** to send a test notification to check your settings or **Finish** to commit your notification and schedule to the unit.

11.5 Base Alarms

The DPM 216 TRIP's discrete base alarms are configured from the **Edit > Base Alarms** menu. Descriptions for the alarm points, polarity (normal or reversed) and notification type(s) are defined from this menu. You also have the option to use a **Basic** or **Advanced** configuration methods, explained the following 2 sections.

11.5.1 Basic Alarm Configuration

DPS Telecom **DPM216 G2 TRIP** [Upload](#) | [Logout](#) | [MyDPS](#)

Monitor Menus:

- Base Alarms
- System Alarms
- Controls
- Analogs

Edit Menus:

- System
- Ethernet
- Serial Port
- Notifications
- Base Alarms
- System Alarms
- Controls
- Analogs
- Date and Time
- Timers
- Reboot

Base Alarms (Basic)

[Go to Advanced Config](#)

Pnt	Description	Rev	Notification devices							
			N1	N2	N3	N4	N5	N6	N7	N8
1	Intrusion	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Tower Lights	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	CS1500 Critical	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	CS1500 Major	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	CS1500 Minor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Generator A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Generator B	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Fuse 112.10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Fuse 112.11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fig. 10.12- The Edit > Base Alarms menu

Editing Base Alarms - Basic	
Pnt (Point)	Alarm point number.
Description	User-definable description for the discrete alarm input.
Rev (Reverse)	<p>Reverse: Check this box to reverse the polarity of the alarm point. Left unchecked, this means a normally-open contact closure is a clear condition. When polarity is reversed, a normally-closed alarm point is clear when closed.</p> <p><i>Example:</i> Door with a magnetic door sensor. When the door is closed, the magnetic sensor acts like a closed relay. However, you know this should not trigger an alarm condition. This means you'd want the door alarm reversed in the DPM because we are looking for a normally closed condition.</p>
Notification devices	<p>Check the boxes, N1 through N8, to determine the notifications that will be sent for each individual alarm point. The notification checkboxes correspond to the 8 notifications (TRIP, SNMP trap, etc.) configured from the Notifications screen. Check the box in the green bar (top) to apply a notification to all Base Alarms.</p>

11.5.2 Advanced Alarm Configuration

The advanced alarm configuration screen provides access to change an alarm's set and clear messages and qualification timers for the alarm. To reach the **Base Alarms (Advanced)** screen, click the **Go to Advanced Config** link above the basic alarm configuration window.

Base Alarms (Advanced)					
Go to Basic Config					
Pnt	Description	On Set	On Clear	Qual. Time	Qual. Type
1	Intrusion	Alarm	Clear	0s	Set <input type="button" value="v"/>
2	Tower Lights	Alarm	Clear	0s	Set <input type="button" value="v"/>
3	CS1500 Critical	Alarm	Clear	0s	Set <input type="button" value="v"/>
4	CS1500 Major	Alarm	Clear	0s	Set <input type="button" value="v"/>
5	CS1500 Minor	Alarm	Clear	0s	Set <input type="button" value="v"/>
6	Generator A	Alarm	Clear	0s	Set <input type="button" value="v"/>
7	Generator B	Alarm	Clear	0s	Set <input type="button" value="v"/>

Fig. 10.13 - The Advanced Base Alarms Config screen

Editing Base Alarms - Advanced	
Pnt (Point)	Point: Alarm point number.
Description	User-definable description for the discrete alarm input.
On Set	User-definable description (condition) that will appear for the discrete alarm input on Set. Example: "Alarm"
On Clear	User-definable description (condition) that will appear for the discrete alarm input on Clear. Example: "Clear"
Qual. Time (Qualification Time)	<p>The length of time that a condition must occur in order for the condition to be considered an Alarm or a Clear.</p> <p><i>Example:</i> If you have a loose door contact and you receive a false alarm every time the wind blows, you might want to set a 3-second qualification time. This means the door would have to be in the Alarm state for at least 3 seconds before the alarm is triggered and a notification is sent.</p>
Qual. Type (Qualification Type)	Allows you to choose whether you want to apply the Qualification Time to the alarm Set, Clear, or Both. (Most people use only Set.)

11.6 System Alarms

System Alarms										
Pnt	Description	Rpt	Notification devices							
			N1	N2	N3	N4	N5	N6	N7	N8
25	Default configuration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Undefined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	MAC address not set	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	IP address not set	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	LAN hardware error	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	SNMP processing error	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	SNMP community error	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	LAN TX packet drop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Notification 1 failed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	Notification 2 failed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	Notification 3 failed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	Notification 4 failed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37	Notification 5 failed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38	Notification 6 failed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39	Notification 7 failed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40	Notification 8 failed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41	NTP failed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42	Timed tick	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	Serial 1 RcvQ full	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44	Dynamic memory full	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45	Unit reset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fig. 10.14 - The Edit > System Alarms menu

Editing System Alarms	
Pnt (Point)	Alarm point number
Description	Non-editable description for this System (housekeeping) Alarm.
Rpt (Report)	Check this box to choose to report this alarm. Check the box in the green bar (top) to have <u>all</u> System Alarms reported. Leave unchecked to ignore.
Notification devices	Check the boxes, N1 through N8, to determine the notifications that will be sent for each individual system alarm. The notification checkboxes correspond to the 8 notifications (TRIP, SNMP trap, etc.) configured from the Notifications screen. Check the box in the green bar (top) to apply a notification to all System Alarms.

11.7 Controls

The DPM 216 TRIP's relay can be configured in the **Edit > Controls** menu. You can enter your own description for this relay and designate it to a notification device(s).

Controls										
			Notification devices							
No.	Description	Mom. Time	N1	N2	N3	N4	N5	N6	N7	N8
1	CO Back Door	1s	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	CO Side Entrance	1s	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fig. 10.15 - The Edit > Controls menu

Editing Control Relays	
Description	User-definable description for the DPM 216 TRIP's control.
Mom. Time	Stands for "Momentary Time," which is the time (in milli-seconds) when you quick-latch the relay from Monitor Mode, T/Mon or other SNMP manager.
Notification Devices	Check the boxes, N1 through N8, to send notifications for each relay. These notification devices correspond to the 8 notifications (TRIP, SNMP trap, etc.) configured from the Notifications screen. Check the box in the green bar (top) to apply a notification to all Control Relays.

11.8 Analogs

Each of the DPM 216 TRIP's analog channels may be individually configured to monitor analog changes in your environment. The analog inputs natively measures voltage on a range of -90 to +90 VDC. By removing the lid of the unit, you can move a jumper to set the point to monitor 4 - 20mA. (Please see Section 5.8 for more info.)

Internal and external temperature sensors monitor the ambient temperature. Both sensors measure a range of 32° F to 140° F (0° C to 60° C) within an accuracy of $\pm 1^\circ$. The external temperature sensor provides external temperature readings by plugging the optional probe into the temperature port on the DPM 216 TRIP's back panel.

You also have the option to use a Basic or Advanced configuration methods, explained the following 2 sections.

11.8.1 Basic Analog Configuration

Basic configuration for the DPM 216 TRIP's analog channels can be accomplished from the **Edit > Analogs** menu. From this screen, you enable or disable the analog channels, select notification devices, and set thresholds.

The screenshot displays the 'Analog' configuration menu. At the top, there's a green bar with 'Notification devices' and checkboxes for Rev, N1, N2, N3, N4, N5, N6, N7, and N8. Below this, two channels are listed. Channel 1 has an 'Enab' checkbox, a 'Description' field, a 'Rev' checkbox, and eight 'Notification devices' checkboxes. Below these are threshold settings: 'Units: VDC', 'MjU: -79.0000', 'MnU: -35.0000', 'MnO: 35.0000', and 'MjO: 79.0000'. An 'Advanced' link is also present for each channel.

Fig. 10.16- The basic Edit > Analogs menu

Editing Analogs - Basic	
Enab (Enable)	Checking the box in the Enab column enables monitoring of the analog channel. Analog channels that are not enabled will not show in the Monitor Menus > Analogs screen.
Description	User-definable description for the analog channel
Rev (Reverse)	Check this box to reverse the polarity. <i>(This is not typically used. Reversing polarity is the same as reversing your wiring. Example: -54VDC becomes +54VDC)</i>
Notification devices	Check which notification device(s), 1 through 8, you want to send alarm notifications for that analog alarm. Check the box in the green bar (top) to have a notification device send an alarm for all analog channels.
MjU (Major Under) MnU (Minor Under) MnO (Minor Over) MjO (Major Over)	Threshold settings. These user-defined value are used to indicate the severity of the alarm by indicating when the threshold values you've set have been passed.

11.8.2 Advanced Analog Configuration

To access the **Advanced** configuration screen, click the **Advanced Config** link near the Description. From the **Advanced** configuration screen, you can now select which analog gauges you want to represent the changing values.

Fig. 10.17- The Advanced Edit > Analogs menu

Editing Analogs - Advanced	
Description	User-definable description for the analog input.
On set	User-definable description (condition) that will appear for the alarm on Set. Example: "Alarm"
On clear	User-definable description (condition) that will appear for the alarm Clear. Example: "Clear"
QTime (Qualification Time)	The length of time that must pass, without interruption, in order for the condition to be considered an Alarm or a Clear.
QType (Qualification Type)	Allows you to choose whether you want to apply the Qualification Time to the alarm Set, Clear, or Both.
Display Units	User-definable display units or optional choice between Fahrenheit and Celsius temperatures. The most common are: VDC = Voltage %H = Humidity F = Fahrenheit C = Celsius
Low Reference *	User-definable lower threshold settings
High Reference *	User-definable upper threshold settings
Analog Gauge Type	Select the color-coded gauge that best represents your data.

* These values are gathered from your sensor. Keep in mind that the DPM is trying to build a linear equation to give the most accurate results. See examples below.

Example 1: If you are measuring battery voltage, we want the DPM to show that the input is -54.2 VDC if -54.2 VDC is really being measured. However, if you are measuring temperature, the values are typically not a 1 : 1 ratio.

Example 2: Your X-Type sensor outputs 4 - 20mA. (We use a 250 ohm resistor to convert current to voltage measurement. Ohms Law tells us that $4\text{mA} \times 250\text{ ohms} = 5\text{ VDC}$. The sensor should tell us what the output current references. In this example, $4\text{mA} = 23^{\circ}\text{ F}$ and $20\text{mA} = 131^{\circ}\text{ F}$ **OR** $1\text{V} = 23^{\circ}\text{ F}$ and $5\text{V} = 131^{\circ}\text{ F}$.

11.9 Date and Time

Date and Time

Time Settings

Date	Month Jun Day 28 Year 2009
Time	Hour 1 Minute 34 AM

Automatic Time Adjustment (NTP)

☐ Enable NTP

NTP Server Address or Host Name Sync

Time Zone GMT-08:00 Pacific Time

Adjust Clock for Daylight Saving Time (DST)

☐ Enable DST

Start Day	Month Jan Weekday First Sunday Hour 1 AM
End Day	Month Jan Weekday First Sunday Hour 1 AM

Reset Save

Fig. 10.18 - The Edit > Date and Time menu

Time Settings	
Date	Select the current month, day, and year from the drop-down menus.
Time	Select the current hour, minutes, and time of day from the drop-down menus.
Automatic Time Adjustment (NTP)	
Enable NTP	Check this box to enable Network Time Protocol.
NTP Server Address or Host Name	Enter the NTP server's IP address or host name, then click Sync. Example: north-america.pool.ntp.org
Time Zone	Select your time zone from the drop-down menu.
Adjust Clock for Daylight Savings Time (DST)	
Enable DST	Check this box to have the DPM 216 TRIP observe Daylight Savings.
Start Day	Select the month, weekday, and time when Daylight Savings will begin.
End Day	Select the month, weekday, and time when Daylight Savings will end.

11.10 Timers

Timers	
Description	Timer Value
Web Refresh (100ms-60s): How often web browser is refreshed when in monitor mode.	1s
Timed Tick (0s-60m): This is a 'heartbeat' function that can be used by masters who don't perform integrity checks.	0s
Sound on time (0s-10m): How long the NetGuardian's speaker will sound when reportable alarm occurs or clears.	0s
DCP inactive timeout (1m-30m): Set system alarm if NetGuardian does not receive a DCP poll with in this timeout time.	1m

Fig. 10.19- The Edit > Timers menu

Timers	
Web refresh	How often the web browser is refreshed when in monitor mode.
Timed Tick	The "heartbeat" function that can be used by masters who don't perform integrity checks.
Power on Relay Delay	Sets the delay between powering on devices during the power-on sequence. To set the Power-on sequence, see the Power Control (Provisioning) section of this manual.
DCP inactive timeout	Sets an alarm if the DPM does not receive a DCP poll within the timeout period. (This may indicate connection problems between T/Mon and the DPM.)

11.11 Reboot

Click on the **Reboot** link from the **Edit** menu will reboot the DPM 216 TRIP after writing all changes to NVRAM.



Fig. 10.20- The Edit > Reboot confirmation popup

12 Monitoring via the Web Browser

12.1 Monitoring Base Alarms

This selection provides the status of the base alarms by indicating if an alarm has been triggered. Under the **State** column, the status will appear in red if an alarm has been activated. The status will be displayed in green when the alarm condition is not present.

Base Alarms		
Pnt	Description	State
1	SERVER ROOM	Clear
2	CO Main Entrance	Clear
3	West Side Door	Clear
4	RECTIFIER	Clear
5	Microwave Site	Clear

Fig. 10.22. Click on Base Alarms in the Monitor menu to see if any base alarms have been triggered.

12.2 Monitoring System Alarms

System alarms are not-editable, housekeeping alarms that are programmed into DPM 216 TRIP. The **Monitor > System Alarms** screen provides the status of the system alarms by indicating if an alarm has been triggered. Under the **State** column, the status will appear in red if an alarm has been activated. The status will be displayed in green when the alarm condition is not present.

See "Display Mapping" in the Reference Section for a complete description of system alarms.

System Alarms		
Pnt	Description	State
25	Default configuration	Clear
26	DCP inactive	Alarm
27	MAC address not set	Clear
28	IP address not set	Clear
29	LAN hardware error	Clear
30	SNMP processing error	Clear
31	SNMP community error	Clear
32	LAN TX packet drop	Clear
33	Notification 1 failed	Clear
34	Notification 2 failed	Clear
35	Notification 3 failed	Clear
36	Notification 4 failed	Clear
37	Notification 5 failed	Clear
38	Notification 6 failed	Clear
39	Notification 7 failed	Clear
40	Notification 8 failed	Clear
41	NTP failed	Clear
42	Timed tick	Clear
43	Serial 1 RcvQ full	Clear
44	Dynamic memory full	Clear
45	Unit reset	Clear
46	Modem init error	Clear
47	Modem report error	Clear

Fig. 10.22 View the status of System Alarms from the Monitor > System Alarms menu.

12.3 Operating Controls

Use the following rules to operate the DPM 216 TRIP's control:

1. Select **Controls** from the **Monitor** menu.
2. Under the **State** field, you can see the current condition of the control.
3. To issue the control, click on a command (**Opr** - operate, **Rls** - release, or **Mom** - momentary)

Controls			
No.	Description	State	Commands
1	CO Back Door	Released	Opr Rls Mom
2	CO Side Entrance	Released	Opr Rls Mom

Fig. 10.23 Operate the control relay by clicking on one of the actions in the Commands field.

12.4 Monitoring Analogs

The **Monitor** menu > **Analogs** screen provides a description of each analog channel, the current reading, the units being read, and alarm conditions (major under, minor under, major over, minor over) according to your temperature settings.

Classic View

Watch the Reading column to see your analog values changes as the information is updated, all without a page refresh. Red Xs indicate when a threshold has been crossed.

Analogs (Gauge View)								
No.	Enb	Description	Reading	Units	MjU	MnU	MnO	MjO
1	Yes	Server Room Temp	2.4728	F				
2	Yes	Head Office Inside Temp	3.4619	F				
3	Yes	Co-location Site Humidity	3.4619	RH				
4	No		0.0000	VDC				

Fig. 10.24 - Monitoring analogs in Classic View allows you to see live unit readings, and see which ones have crossed your thresholds..

Gauge View

The gauge types you chose appear on this screen, along with the changing analog values. The circles under each of the gauges flash when thresholds have been crossed.

Note: Only enabled analog channels (analogs for which the **Enab** box is checked on the **Monitor Menus > Analogs** screen) will display in gauge view. Enabled analogs will display in numerical order in rows of 2 (ex. Channel's 1, 3, and 4 are enabled but 2 is not. Channels 1 and 3 will be displayed next to each other, and 4 will begin a new row).

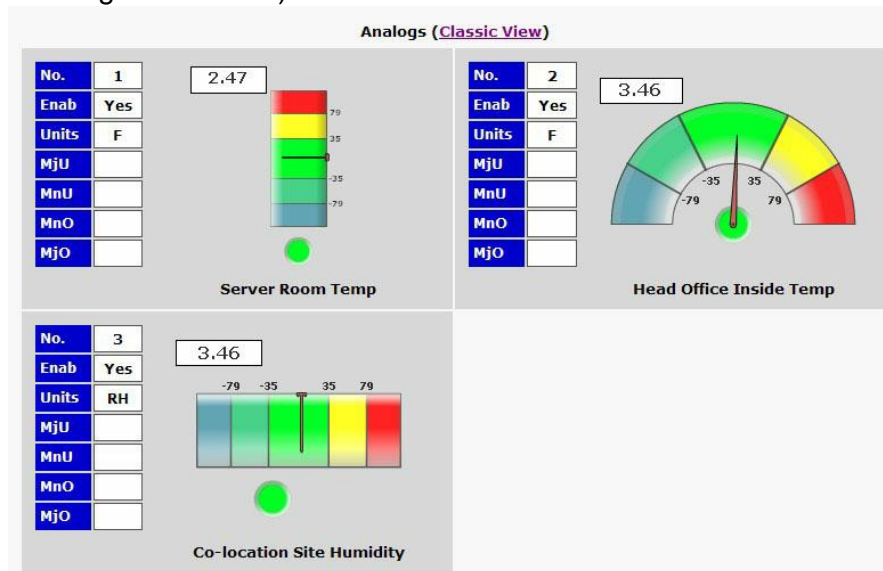


Fig. 10.25 - Monitoring analogs in Gauge View offers you a visual representation of where all your analogs stand. Channel 4 is not enabled in this example, so it is not shown.

13 Firmware Upgrade

To access the **Firmware Load** screen, click on the **Edit > System** menu. At the bottom of this screen, click the firmware link located in the **System Controls** section.



Fig. 13.1 - The clickable link to upgrade firmware from the Edit > System menu

At the **Firmware Load** screen, simply browse for the firmware update you've downloaded from www.dpstele.com and click **Load**.

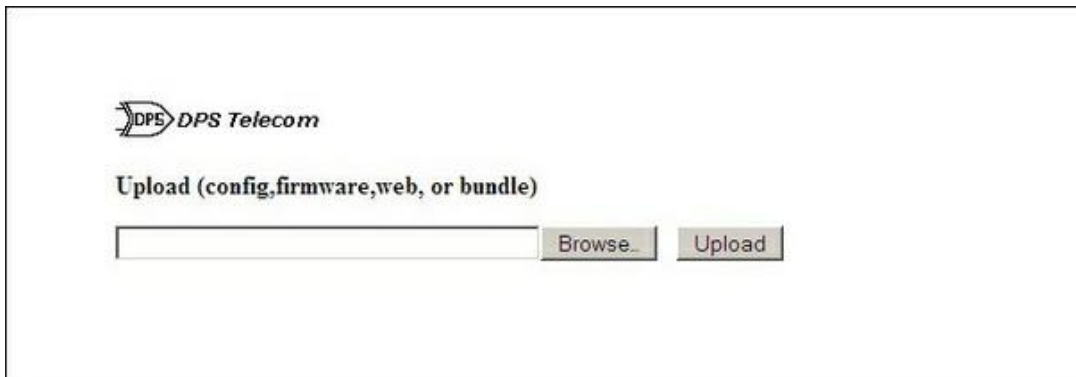


Fig. 13.2 - Browse for downloaded firmware upgrade

14 Reference Section

14.1 Display Mapping

	Description	Port	Address	Point
Display 1	Discrete Alarms	99	1	1-16
	Control Relays	99	1	17-18
	System Alarms	99	1	25-45
Display 2	Analog 1 Minor Under	99	1	1
	Analog 1 Minor Over	99	1	2
	Analog 1 Major Under	99	1	3
	Analog 1 Major Over	99	1	4
	Analog Value	99	1	5-64
Display 3	Analog 2 Minor Under	99	1	1
	Analog 2 Minor Over	99	1	2
	Analog 2 Major Under	99	1	3
	Analog 2 Major Over	99	1	4
	Analog Value	99	1	5-64
Display 4	Analog 3 Minor Under	99	1	1
	Analog 3 Minor Over	99	1	2
	Analog 3 Major Under	99	1	3
	Analog 3 Major Over	99	1	4
	Analog Value	99	1	5-64
Display 5	Analog 4 Minor Under	99	1	1
	Analog 4 Minor Over	99	1	2
	Analog 4 Major Under	99	1	3
	Analog 4 Major Over	99	1	4
	Analog Value	99	1	5-64
Display 6	Analog 5 Minor Under	99	1	1
	Analog 5 Minor Over	99	1	2
	Analog 5 Major Under	99	1	3
	Analog 5 Major Over	99	1	4
	Analog Value	99	1	5-64
Display 7	Analog 6 Minor Under	99	1	1
	Analog 6 Minor Over	99	1	2
	Analog 6 Major Under	99	1	3
	Analog 6 Major Over	99	1	4
	Analog Value	99	1	5-64
Display 8	Analog 7 Minor Under	99	1	1
	Analog 7 Minor Over	99	1	2
	Analog 7 Major Under	99	1	3
	Analog 7 Major Over	99	1	4
	Analog Value	99	1	5-64
Display 9	Analog 8 Minor Under	99	1	1
	Analog 8 Minor Over	99	1	2
	Analog 8 Major Under	99	1	3
	Analog 8 Major Over	99	1	4
	Analog Value	99	1	5-64

Table 14.1

14.2 System Alarms Display Map

Display	Points	Alarm Point	Description	Solution
1	25	Default configuration	The internal NVRAM may be damaged. The unit is using default configuration settings.	Login to the DPM's web browser and configure the unit. Power cycle to see if the alarm clears.
	26	DCP Inactive	Alarm is active when not being polled by T/Mon master station	Verify the path to T/Mon is valid and T/Mon is online.
	27	MAC Address not set	The MAC Address is not set.	Call DPS Tech Support: (559) 454-1600
	28	IP Address not set	The IP is not set.	See Section "Quick Start: How to Connect to the DPM 216 TRIP via Craft Port." If not using the DPM over LAN, set the IP address to 255.255.255.255
	29	LAN hardware error	The unit does not have a solid LAN link to the hub, switch, or router.	If connecting to a hub you might require a LAN crossover cable.
	30	SNMP processing error	SNMP trap address is not defined and an SNMP trap event occurred.	Define the IP Address where you would like to send SNMP trap events, or configure the event not to trap.
	31	SNMP community error	Community string does not match your SNMP master's community string.	Verify both community strings to make sure they match.
	32	LAN TX packet drop	An error occurred transmitting data over LAN.	Verify that you can ping both devices.
	33	Notification 1 failed	A notification 1 event, such as a page or T/Mon notification, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	34	Notification 2 failed	A notification 2 event, such as a page or T/Mon notification, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	35	Notification 3 failed	A notification 3 event, such as a page or T/Mon notification, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	36	Notification 4 failed	A notification 4 event, such as a page or T/Mon notification, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	37	Notification 5 failed	A notification 5 event, such as a page or T/Mon notification, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	38	Notification 6 failed	A notification 6 event, such as a page or T/Mon notification, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	39	Notification 7 failed	A notification 7 event, such as a page or T/Mon notification, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	40	Notification 8 failed	A notification 8 event, such as a page or T/Mon notification, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	41	NTP failed	Communication with Network Time Server has failed.	Try pinging the Network Time Server's IP Address as it is configured. If the ping test is successful, then check the port setting and verify the port is not being blocked on your network.
	42	Timed Tick	Toggles state at constant rate as configured by the Timed Tick timer variable. Useful in testing integrity of SNMP trap alarm reporting.	To turn the feature off, set the Timed Tick timer to 0.
	43	Serial 1 RcvQ	Serial port 1 (or appropriate serial port	Check proxy connection. The serial port

Display	Points	Alarm Point	Description	Solution
		full	number) receiver filled with 8 K of data (4 K if BAC active).	data may not be getting collected as expected.
	44	Dynamic memory full	Not expected to occur.	Call DPS Tech Support (559) 454-1600
	45	Unit reset	Unit has rebooted.	If unintentional, call DPS Tech Support: (559) 454-1600.
	46	Modem init error	Modem has not initialized	Check to make sure your Dial Init string is correct
	47	Modem report error	The modem is not receiving a response from the device it is contacting	Ensure that your DPM is dialing the correct number.

14.3 SNMP Manager Functions

The SNMP Manager allows the user to view alarm status, set date/time, issue controls, and perform a resync. The display and tables below outline the MIB object identifiers. The table below begins with dpsRTU; however, the MIB object identifier tree has several levels above it. The full English name is as follows: root.iso.org.dod.internet.private.enterprises.dps-inc.dpsAlarmControl.dpsRTU. Therefore, dpsRTU's full object identifier is 1.3.6.1.4.1.2682.1.4. Each level beyond dpsRTU adds another object identifying number. For example, the object identifier of the Display portion of the Control Grid is 1.3.6.1.4.1.2682.1.4.3.3 because the object identifier of dpsRTU is 1.3.6.1.4.1.2682.1.4 + the Control Grid (.3) + the Display (.3).

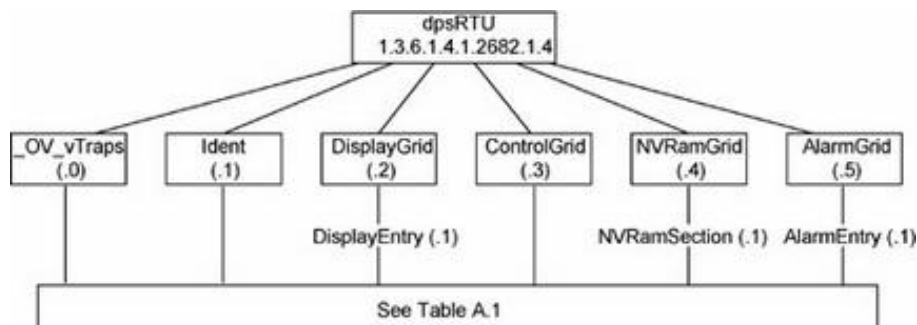


Table 14.2

Tbl. B1 (O.) _OV_Traps points	Tbl. B2 (.1) Identity points	Tbl. B3 (.2) DisplayGrid points
_OV_vTraps (1.3.6.1.4.1.2682.1.4.0)	Ident (1.3.6.1.4.1.2682.1.4.1)	DisplayEntry (1.3.6.1.4.1.2682.1.4.2.1)
PointSet (.20)	Manufacturer (.1)	Port (.1)
PointClr (.21)	Model (.2)	Address (.2)
SumPSet (.101)	Firmware Version (.3)	Display (.3)
SumPClr (.102)	DateTime (.4)	DispDesc (.4)*
ComFailed (.103)	ResyncReq (.5)*	PntMap (.5)*
ComRestored (.014)	* Must be set to "1" to perform the resync request which will resend TRAPS for any standing alarm.	
P0001Set (.10001) through P0064Set (.10064)		
P0001Clr (.20001) through P0064Clr (.20064)		

Tbl. B3 (.3) ControlGrid points	Tbl. B5 (.5) AlarmEntry points
ControlGrid (1.3.6.1.4.1.2682.1.4.3)	AlarmEntry (1.3.6.4.1.2682.1.4.5.1)
Port (.1)	Aport (.1)
Address (.2)	AAddress (.2)
Display (.3)	ADisplay (.3)
Point (.4)	APoint (.4)
Action (.5)	APntDesc (.5)*
	AState (.6)
	* For specific alarm points, see Table B6

14.4 SNMP Granular Trap Packets

SNMP Trap managers can use one of two methods to get alarm information:

1. Granular traps (not necessary to define point descriptions for the DPM 216 TRIP) **OR**
2. The SNMP manager reads the description from the Trap.

UDP Header	Description
1238	Source port
162	Destination port
303	Length
0xBAB0	Checksum

UDP Headers and descriptions

SNMP Header	Description
0	Version
Public	Request
Trap	Request
1.3.6.1.4.1.2682.1.4	Enterprise
126.10.230.181	Agent address
Enterprise Specific	Generic Trap
8001	Specific Trap
617077	Time stamp
1.3.7.1.2.1.1.1.0	Object
DPM v1.0K	Value
1.3.6.1.2.1.1.6.0	Object
1-800-622-3314	Value
1.3.6.1.4.1.2682.1.4.4.1.0	Object
01-02-1995 05:08:27.760	Value
1.3.6.1.4.1.2682.1.4.5.1.1.99.1.1.1	Object
99	Value
1.3.6.1.4.1.2682.1.4.5.1.2.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.3.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.4.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.5.99.1.1.1	Object
Rectifier Failure	Value
1.3.6.1.4.1.2682.1.4.5.1.6.99.1.1.1	Object
Alarm	Value

SNMP Headers and descriptions

15 Frequently Asked Questions

Here are answers to some common questions from DPM 216 TRIP users. The latest FAQs can be found on the DPM 216 TRIP support web page, <http://www.dpstele.com>.

If you have a question about the DPM 216 TRIP, please call us at **(559) 454-1600** or e-mail us at support@dpstele.com

15.1 General FAQs

Q. How do I telnet to the DPM 216 TRIP?

- A.** You must use **Port 2002** to connect to the DPM 216 TRIP. Configure your Telnet client to connect using TCP/IP (**not** "Telnet," or any other port options). For connection information, enter the IP address of the DPM 216 TRIP and Port 2002. For example, to connect to the DPM 216 TRIP using the standard Windows Telnet client, click Start, click Run, and type "telnet <DPM 216 TRIP IP address> 2002."

Q. How do I connect my DPM 216 TRIP to the LAN?

- A.** To connect your DPM 216 TRIP to your LAN, you need to configure the unit IP address, the subnet mask and the default gateway. A sample configuration could look like this:

Unit Address: 192.168.1.100

subnet mask: 255.255.255.0

Default Gateway: 192.168.1.1

Save your changes by writing to NVRAM and reboot. Any change to the unit's IP configuration requires a reboot.

Q. When I connect to the DPM 216 TRIP through the craft port on the front panel it either doesn't work right or it doesn't work at all. What's going on?

- A.** Make sure your using the right COM port settings. Your COM port settings should read:

Bits per second: 9600 (9600 baud)

Data bits: 8

Parity: None

Stop bits: 1

Flow control: None

Important! Flow control **must** be set to **none**. Flow control normally defaults to hardware in most terminal programs, and this will not work correctly with the DPM 216 TRIP.

Q. The LAN link LED is green on my DPM 216 TRIP, but I can't poll it from my T/Mon.

- A.** Some routers will not forward packets to an IP address until the MAC address of the destination device has been registered on the router's Address Resolution Protocol (ARP) table. Enter the IP address of your gateway and your T/Mon system to the ARP table.

Q. What characteristics of an alarm point can be configured through software? For instance, can point 4 be used to sense an active-low signal, or point 5 to sense a level or an edge?

- A.** The unit's standard configuration is for all alarm points to be level-sensed. You **cannot** use configuration software to convert alarm points to TTL (edge-sensed) operation. TTL alarm points are a hardware option that must be specified when you order your DPM 216 TRIP. Ordering TTL points for your DPM 216 TRIP does not add to the cost of the unit. What you can do with the configuration software is change any alarm point from "Normal" to "Reversed" operation. Switching to Reversed operation has different effects, depending on the kind of input connected to the alarm

point:

- **If the alarm input generates an active-high signal**, switching to Reversed operation means the DPM 216 TRIP will declare an alarm in the absence of the active-high signal, creating the practical equivalent of an active-low alarm.
- **If the alarm input generates an active-low signal**, switching to Reversed operation means the DPM 216 TRIP will declare an alarm in the absence of the active-low signal, creating the practical equivalent of an active-high alarm.
- **If the alarm input is normally open**, switching to Reversed operation converts it to a normally closed alarm point.
- **If the alarm input is normally closed**, switching to Reversed operation converts it to a normally open alarm point.

Q. I'm unsure if the voltage of my power supply is within the specified range. How to I test the voltage?

A. Connect the black common lead of a voltmeter to the ground terminal of the battery. Connect the red lead of the voltmeter to the batter's VCD terminal. The voltmeter should read between +12 and +30VDC.

15.2 SNMP FAQs

Q. Which version of SNMP is supported by the SNMP agent on the DPM?

A. SNMP v1 and SNMPv2c.

Q. How do I configure the DPM 216 TRIP to send traps to an SNMP manager? Is there a separate MIB for the DPM 216 TRIP? How many SNMP managers can the agent send traps to? And how do I set the IP address of the SNMP manager and the community string to be used when sending traps?

A. The DPM 216 TRIP begins sending traps as soon as the SNMP managers are defined. The DPM 216 TRIP MIB is included on the DPM 216 TRIP Resource CD. The MIB should be compiled on your SNMP manager. (**Note:** MIB versions may change in the future.) The unit supports 2 SNMP managers, which are configured by entering its IP address in the Trap Address field of Ethernet Port Setup. To configure the community strings, choose SNMP from the Edit menu, and enter appropriate values in the Get, Set, and Trap fields.

Q. Does the DPM 216 TRIP support MIB-2 and/or any other standard MIBs?

A. The DPM 216 TRIP supports the bulk of MIB-2.

Q. Does the DPM 216 TRIP SNMP agent support both DPM 216 TRIP and T/MonXM variables?

A. The DPM 216 TRIP SNMP agent manages an embedded MIB that supports only the DPM 216 TRIP's RTU variables. The T/MonXM variables are included in the distributed MIB only to provide SNMP managers with a single MIB for all DPS Telecom products.

Q. How many traps are triggered when a single point is set or cleared? The MIB defines traps like "major alarm set/cleared," "RTU point set," and a lot of granular traps, which could imply that more than one trap is sent when a change of state occurs on one point.

A. Generally, a single change of state generates a single trap.

Q. What does "point map" mean?

A. A point map is a single MIB leaf that presents the current status of a 64-alarm-point display in an ASCII-readable form, where a "." represents a clear and an "x" represents an alarm.

Q. The DPM 216 TRIP manual talks about control relay outputs. How do I control these from my SNMP manager?

A. The control relays are operated by issuing the appropriate set commands, which are contained in the DPS Telecom MIB.

Q. How can I associate descriptive information with a point for the RTU granular traps?

A. The DPM 216 TRIP alarm point descriptions are individually defined using the Web Browser.

Q. My SNMP traps aren't getting through. What should I try?

A. Try these three steps:

1. Make sure that the Trap Address (IP address of the SNMP manager) is defined. (If you changed the Trap Address, make sure you saved the change to NVRAM and rebooted.)
2. Make sure all alarm points are configured to send SNMP traps.
3. Make sure the DPM 216 TRIP and the SNMP manager are both on the network. Use the unit's ping command to ping the SNMP manager.

16 Technical Support

DPS Telecom products are backed by our courteous, friendly Technical Support representatives, who will give you the best in fast and accurate customer service. To help us help you better, please take the following steps before calling Technical Support:

1. Check the DPS Telecom website.

You will find answers to many common questions on the DPS Telecom website, at <http://www.dpstele.com/support/>. Look here first for a fast solution to your problem.

2. Prepare relevant information.

Having important information about your DPS Telecom product in hand when you call will greatly reduce the time it takes to answer your questions. If you do not have all of the information when you call, our Technical Support representatives can assist you in gathering it. Please write the information down for easy access. Please have your user manual and hardware serial number ready.

3. Have access to troubled equipment.

Please be at or near your equipment when you call DPS Telecom Technical Support. This will help us solve your problem more efficiently.

4. Call during Customer Support hours.

Customer support hours are Monday through Friday, from 7 A.M. to 6 P.M., Pacific time. The DPS Telecom Technical Support phone number is **(559) 454-1600**.

Emergency Assistance: *Emergency assistance is available 24 hours a day, 7 days a week. For emergency assistance after hours, allow the phone to ring until it is answered with a paging message. You will be asked to enter your phone number. An on-call technical support representative will return your call as soon as possible.*

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This Agreement shall be construed and enforced in accordance with the laws of the State of California, without regard to choice of law principles and excluding the provisions of the UN Convention on Contracts for the International Sale of Goods. Any dispute arising out of the Agreement shall be commenced and maintained only in Fresno County, California. In the event suit is brought or an attorney is retained by any party to this Agreement to seek interpretation or construction of any term or provision of this Agreement, to enforce the terms of this Agreement, to collect any money due, or to obtain any money damages or equitable relief for breach, the prevailing party shall be entitled to recover, in addition to any other available remedy, reimbursement for reasonable attorneys' fees, court costs, costs of investigation, and other related expenses.

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For an additional fee DPS may, at its option, make available by written agreement only an extended warranty providing an additional period of time for the applicability of the standard warranty.

Technical Support

If a purchaser believes that a product is not operating in substantial conformance with DPS' published specifications or there appear to be defects in material and workmanship, the purchaser should contact our technical support representatives. If the problem cannot be corrected over the telephone and the product and problem are covered by the warranty, the technical support representative will authorize the return of the product for service and provide shipping information. If the product is out of warranty, repair charges will be quoted. All non-warranty repairs receive a 90-day warranty.

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